DOCUMENT RESUME

ED 256 951 CE 041 525

AUTHOR	Branch, Alvia Y.; And Others
TITLE	Summer Training and Education Program (STEP). Report on the Pilot Experience.
INSTITUTION	Public/Private Ventures, Philadelphia, PA.
PUB DATE	Mar 85
NOTE	186p.
AVAILABLE FROM	Public/Private Ventures, 399 Market Street, Philadelphia, PA 19106 ($10.00 prepaid).
PUB TYPE	Reports - Descriptive (141)
EDRS PRICE	MF01 Plus Postage. PC Not Available from EDRS.
DESCRIPTORS	*Career Awareness; Career Education; *Disadvantaged; Pilot Projects; Program Development; Program Effectiveness; Program Implementation; *Remedial Programs; Secondary Education; *Summer Programs; *Work Experience Programs
IDENTIFIERS	*Life Planning

ABSTRACT

This report presents a broad overview and assesses the effectiveness of the summer 1984 pilot of the Summer Training and Education Program (STEP). Chapter I provides a general introduction. These three program objectives are cited: increase participants' level of achievement, increase their ability to make responsible decisions about sexual behavior, and increase their career awareness. Chapter II describes the research design that provides the data upon which this assessment is based. These two components are considered: implementation analysis and impact analysis. Chapter III describes the key features of the program model as it was developed at three participating sites. The chapter offers program overviews, introduces sponsoring agenices at each site, compares the remediation programs offered, describes the work experience component, reviews the life planning component, and discusses participant recruitment and selection. Chapter IV presents a detailed profile of participating youth--both treatments and controls. Chapter V examines the impacts of program participation on academic performance and life planning attitudes and behaviors. Chapter VI summarizes findings and delineates early program lessons. Some findings are increased knowledge of birth control information and increased basic skills. (Data tables are appended.) (YLB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED256951

P/PV

Public/Private Ventures

399 Market Street
Philadelphia, PA 19106
(215) 592-9099

Summer Training and Education Program (STEP)

Report on the Pilot Experience

March 1985

CE041525

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL IN MICROFICHE ONLY HAS BEEN GRANTED BY

A Jaffe

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Public/Private Ventures (P/PV) is a national, not-for-profit corporation that seeks effective approaches to job training and education for disadvantaged citizens. P/PV designs and manages demonstration projects, conducts program evaluations, and provides technical assistance to others. Its work is supported by funds from both the public and private sectors.

A list of publications and further information about P/PV are available from: The Resource Center, Public/Private Ventures, 399 Market Street, Philadelphia, PA. 19106. Telephone: 215-592-9099.

Public/Private Ventures Board of Directors

Rex D. Adams
General Manager
Employee Relations
Mobil Oil Corporation
New York, New York

Judith Barker
President
The Borden Foundation
Columbus, Ohio

Alan Campbell
Vice Chairman
ARA Services, Inc.
Philadelphia, Pennsylvania

Edwin D. Campbell
Executive Vice President
National Alliance of Business
Washington, D.C.

Walter D'Alessio
President & Chief Executive Officer
Latimer and Buck
Philadelphia, Pennsylvania

Nolen Ellison
President
Cuyahoga Community College
Cleveland, Ohio

Sol Hurwitz
Senior Vice President
Committee for Economic Development
New York, New York

Katharine C. Lyall
Vice President, Academic Affairs
University of Wisconsin System
Madison, Wisconsin

Arabella Martinez
Arabella Martinez Institute
Washington, D.C.

Steven A. Minter
Director
The Cleveland Foundation
Cleveland, Ohio

Ersa H. Poston
Personnel Management Consultant
McLean, Virginia

William J. Spring
Consultant to the Federal Reserve Bank of Boston
Boston, Massachusetts

Anita A. Summers
Chairperson, Department of Public Policy and Manageme
The Wharton School
University of Pennsylvania
Philadelphia, Pennsylvania

Alfred M. Zuck
Executive Director
National Association of Schoo
of Public Affairs and Administration
Washington, D.C.

Alan Campbell
Chairman of the Board

Michael A. Bailin
President

BEST COPY AVAILABLE

P/PV

Public/Private Ventures

399 Market Street
Philadelphia, PA 19106
(215) 592-9099

SUMMER TRAINING AND EDUCATION PROGRAM (STEP)

Report on the Pilot Experience

March 1985

Alvia Y. Branch, Principal Author
Julita Milliner
Susan Philipson Bloom
Jon Bumbaugh

ACKNOWLEDGEMENTS

The authors wish to acknowledge some of the many persons who made important contributions to this report. Wendy Wolf, Director of Research at P/PV provided overall guidance and gave specific advice regarding analytical and research design issues. Rickey Etheredge, Jerene Good, Eleanor Hammond and Batia Trietsch -- members of P/PV's data unit -- provided invaluable assistance with the management and analysis of the data. Michael Bailin, Thomas J. Smith, Frances Vilella-Velez, May Pritchard and Sally Leiderman reviewed early drafts of the report and contributed valuable insights. Paula Strawberry, Lisa Mannella and Charlotte White typed numerous drafts of the manuscript. Carol Thomson and Natalie Jaffe made important editorial contributions. Finally, many individuals at the STEP pilot sites contributed both time and insights.

I-PS-1
I-PS-Lib-1

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY i

I. INTRODUCTION I-1

II. OVERVIEW OF THE RESEARCH DESIGN II-1

III. THE IMPLEMENTATION OF STEP III-1

IV. A PROFILE OF STEP PARTICIPANTS IV-1

V. PROGRAM IMPACTS V-1

VI. SUMMARY -- EARLY PROGRAM ISSUES VI-1

APPENDICES

APPENDIX A: Data Appendix A-1

APPENDIX B: Technical Appendix B-1

LIST OF TABLES AND CHARTS

Page

Table II-1 STEP Data Base, by Source II-7

Table II-2 STEP Analysis Samples, by Sample Size II-10

Table III-1 Roles and Responsibilities of Principal Local Actors III-8

Table III-2 Remediation Component Characteristics, by Site III-15

Table III-3 Treatment Student Assessments of Remediation, by Site III-17

Table III-4 Most Important Component of STEP as Reported by Participants III-19

Table III-5 Characteristics of the Work Experience Component of STEP III-23

Table III-6 Participant Assessments of the Work Experience Component of STEP III-24

Table III-7 Treatment Student Assessments of the Life Planning Component III-30

Table IV-1 Distribution of STEP Treatment and Control Students by Program Eligibility Criteria IV-3

Table IV-2 Demographic Characteristics of STEP Participants at Baseline IV-7

Table IV-3 Additional Educational Characteristics of STEP Participants at Baseline IV-9

Table IV-4 Employment Characteristics of STEP Participants at Baseline IV-11

Table IV-5 Fertility-Related Characteristics of STEP Participants at Baseline IV-13

Table V-1 Percentage Distribution of Program Participation by Site V-4

Chart V-1 Variables that Differentiate the Completers and Non-Completers by Site V-6

List of Tables and Charts - (cont'd)

		Page
Table V-2	Determinants of Hours of Program Participation in Boston	V-8
Table V-3	MAT Scores in Reading and Math by Site	V-10
Table V-4	Impact of Participation in STEP on MAT Scores in Reading and Math by Site	V-12
Table V-5	Impact of Participation in STEP on MAT Scores, by Sex and Race	V-15
Table V-6	Mean Number of Jobs Considered to be Appropriate for Women, by Sex, Age, Race and Program Participation	V-18
Table V-7	Impact of Participation in STEP on Career Perceptions, by Site	V-20
Table V-8	Percent of Respondents Believing Men and Women are Paid Equally for Equal Work by Sex, Age, Race and Program Participation	V-21
Table V-9	Percent of Respondents Able to Correctly Answer Both Birth Control Knowledge Questions by Sex, Age, Race and Program Participation	V-24
Table V-10	Impact of Participation in STEP on Fertility-Related Attitudes by Site	V-27
Table V-11	Percent of Respondents Able to Answer Both Questions Measuring Awareness of the Consequences of Adolescent Pregnancy by Sex, Age and Program Participation	V-29

EXECUTIVE SUMMARY

BACKGROUND

Each year, large numbers of disadvantaged youth enter the labor force without adequate preparation: their basic academic and job skills are unequal to the tasks that they will soon face as young adults. Many will have dropped out of school without having earned a high school diploma, thereby seriously curtailing their long-term employment and earnings prospects.

Research has consistently demonstrated that unsuccessful academic experiences -- performing poorly in classes and failing a grade -- are key factors in the high dropout rate among disadvantaged youth. A second major cause of dropping out is teenage pregnancy, and recent research has shown a connection between parenting and decisions to drop out by both girls and boys.

Another body of research has shown that summers are critical periods in the academic development of disadvantaged youth. Therefore, the Summer Youth Employment Program (SYEP) is an appropriate vehicle for addressing contributing factors in dropout behavior. SYEP is one of the largest national programs for disadvantaged youth and comes into contact with about 700,000 youth annually, many of them potential dropouts. As presently structured, it provides summer work experience and income for youth who would otherwise be unlikely to find jobs. SYEP has served many young people over the years, but has seldom tried to help its participants make a successful school-to-work transition.

THE SUMMER TRAINING AND EDUCATION PROGRAM (STEP)

The Summer Training and Education Program (STEP) seeks to improve school retention rates and, ultimately, labor market outcomes for disadvantaged youth aged 14 and 15 by addressing two serious obstacles to high school graduation for members of this target population: negative academic experiences and adolescent parenthood. In augmenting work experience with academic remediation and help in life planning, STEP is a prototype for redesign of the SYEP.

Participants in STEP have an opportunity to spend two summers in a program that provides both academic remediation and instruction in life planning skills, in addition to the work experience traditionally available to them in summer jobs programs. In the intervening year, they take part in a voluntary social support component designed to reinforce the gains achieved during the first summer and to create expectations for similar gains in the future.

During the summer of 1984, a pilot of the STEP program model was conducted in three communities: Boston, Massachusetts; Pinellas County, Florida; and Baltimore, Maryland. At each of these sites, a consortium of public and private agencies with experience in the employment and training field was responsible for the development, coordination and implementation of this program.

Public/Private Ventures (P/PV), a not-for-profit corporation that seeks strategies to help disadvantaged people become more self-sufficient, had overall management responsibility for this effort. P/PV was responsible for site selection, technical assistance in program design and implementation, and research and evaluation.

Research findings from the pilot program have encouraged P/PV to proceed with a full-scale national demonstration that will operate in six sites starting in June 1985. P/PV concluded that the STEP model justifies further experimentation: to affirm findings that the model was successful in generating significant academic gains; to test a strengthened life-planning component for which research found indications, but not conclusive evidence, of effectiveness; and to assertain the long-term impacts of this kind of intervention.

The lessons and recommendations that emerged from the summer pilot have been used to make adjustments in the model for its national demonstration phase. Program operations will include two waves of participants, each involved in a two summer program (1985-86 and 1986-87) with follow-up during the school year in between; research operations will continue for an additional five years.

For the 1984 pilot, STEP received public and private support from both local and national sources. Of these sources, funds from the Job Training Partnership Act (JTPA) and the Ford Foundation were major elements. All three sites were able to augment these funds with local resources.

THE STEP PILOT

Objectives

In its pilot phase, STEP focused on attaining those objectives that could be observed within the course of a single summer. Among them were:

- o increasing the academic achievement of participants in reading and math or stemming summer learning losses in these areas;

- increasing participants' ability to make responsible decisions about sexual behavior, thus reducing the likelihood of teenage pregnancy; and

- increasing participants' career awareness.

The program model remains essentially the same in the national demonstration, but research objectives include assessment of more varied and longer-term outcomes.

Target Population

STEP targets low-income youth, ages 14 and 15. Members of this age group are likely to be more responsive to remedial efforts than they are at later ages, are making the critical transition between junior and senior high school, are interested in obtaining jobs but are too young to compete successfully with older youth, and are reaching the threshold of risk for becoming teenage parents. To qualify for participation in STEP, participants must have significant educational deficiencies and be economically disadvantaged.

The Treatment

Four separate but related components comprise the STEP treatment -- remediation, work experience, life planning and social support. Participants in STEP are eligible for two summers' participation in a program combining the first three of these components. The fourth, the social support component, occurs during the school year and provides a bridge between the two summers.

In the pilot, the total number of hours available in the summer program ranged from 180 to 240 divided into two roughly equal segments comprised of classroom instruction and work experience. Generally, youth were compensated for their participation in both components of the program at the same rate as participants in the Summer Youth Employment Program -- usually minimum wage.

Because STEP is being proposed as an alternative to the regular SYEP, outcomes for youth who participate in STEP are contrasted with outcomes for a similar group of youth who receive only the summer work experience and income traditionally provided by SYEP.

The remediation component provides 90 hours of basic skills instruction, primarily in reading and math, with the aim of producing gains, or, at least, decreasing the losses usually experienced over the summer months. The STEP model calls for a remediation curriculum that is individualized, self-paced and competency-based.

Work experience is provided through SYEP and most STEP participants are therefore likely to be employed in entry level jobs in the clerical, maintenance, and parks and recreation fields.

The life planning component presents a curriculum aimed at developing responsible social and sexual attitudes and behavior among participating youth. This segment covers such topics as decision-making, workplace behavior, job equality issues, the consequences of teenage parenting and a variety of ways to avoid pregnancy, abstinence among them. The curriculum, developed by the Center for Population Options under contract to P/PV, runs approximately 18 hours, using lectures, discussions, field trips, role-plays, films and outside speakers.

The social support component seeks to ensure that participating youth maintain gains achieved during the summer, continue academic achievement during the school year and return to STEP the subsequent summer.

Site Selection and Development

The criteria for pilot site selection included:

- interest in, or previous experience with, programs integrating academic remediation and work experience in summer youth employment programs;
- willingness to cooperate with the key research requirements of the program -- the recruitment of 500 SYEP applicants, to be randomly assigned to experimental and control group conditions; and
- the ability to develop and implement the program within a relatively short time.

Boston and Pinellas County, Florida were selected to conduct the pilot. Baltimore, which already had a well developed program design that varied from the P/PV model, was included because it provided another opportunity to observe a test of STEP's basic concepts. However, because it lacked random selection and a control group, and was restricted to 14-year-olds, the Baltimore site does not contribute fully to the analysis of program impacts.

The Research Design

The two major components of the design are an implementation analysis and an impact analysis. The implementation analysis attempts to delineate early program lessons by describing the processes involved in the planning, coordination and implementation of STEP. The impact analysis examines the short-term effects of STEP on its participants in the specific areas of academic performance, employment-related attitudes and behaviors, and the development of responsible social and sexual attitudes and behavior.

The total pilot sample included 950 youth. The Boston pilot included 517 participants: 257 in the treatment group and 260 in the control group. Pinellas County served a total of 359 participants, 180 treatments and 179 controls. Baltimore had a treatment group only, of 74 youth. The primary analysis sample included 760 youth.

The primary measure of academic performance is the Metropolitan Achievement Test (MAT), a test of achievement in math and reading. The SYEP application form and a P/PV baseline questionnaire are the sources for demographic characteristics of the sample and for pre-test measures of a number of program-relevant attitudes, knowledge and behavior. Other data include program timesheets and a follow-up questionnaire.

EARLY PROGRAM LESSONS

The experience to date has been encouraging. The 1984 summer pilot has shown that, in general, STEP works. First, it seems to have worked operationally. The short period available for site development and program planning notwithstanding, operators were able to put into place a program that in most instances delivered the treatment, pretty much as designed, to the target population.

Similarly, STEP appears to have attained a measure of success in achieving for its participants some of the impacts intended. Participants made significant gains in basic academic skills and achieved some improvements with respect to their knowledge of job opportunities, contraception and the burdens of teenage parenting.

Program Implementation

Academic Remediation. The content, format and amount of academic remediation varied substantially from site to site and, in Boston, among individual work/remediation sites. In addition, there were variations in the amount of computer-assisted instruction available at the sites. Although there may have been differences in perceived ease of implementation, none of these approaches was clearly more effective than any of the others in attaining learning gains. STEP participants attained learning gains regardless of which approach they followed.

The life planning component. Remarkably few problems were encountered in implementation. P/PV had developed a prescribed curriculum that sites were asked to adopt more or less wholesale. All life planning instructors attended a training session that familiarized them with course content and helped them anticipate difficult questions and situations. In addition, some received limited technical assistance during the summer.

It became very clear that, given their level of sexual experience, ignorance of methods of contraception and failure to practice contraception, this target population is greatly in need of the fertility-related aspects of the life planning component. Participation in STEP has, in many cases, brought to these youth their first systematic exposure to sex education and family planning instruction.

The work experience component was also implemented smoothly, mirroring in most respects the work experience provided for youth participating in the Summer Youth Employment Program. Significantly, program operators did not experience problems developing half-day jobs.

Participant responses to individual program components were generally positive, but the number of youths saying they would definitely like to return for a second summer was disappointing. End-of-summer projections are not necessarily accurate predictions of whether a youth will return the second summer (particularly given limited job opportunities), but they are early warning signals.

Program Impacts

Life Planning. At the end of the summer, participants had significantly greater knowledge of birth control information than did members of the control group. In addition, they had a better appreciation of the consequences of adolescent parenthood than did controls. However, many studies of adolescent sexual behavior have found improvements in birth control knowledge coupled with a lack of improvement in contraceptive utilization. For this reason, it is important that the life planning component be strengthened in ways that would increase its impact on participants' sexual and contraceptive behavior.

STEP also attempted to raise participant consciousness of the world of work. One project goal is to influence some young women to consider following careers in areas not traditionally female. It appears, however, that STEP was not successful in this aim. At follow-up, only male participants in the Pinellas County program had identified greater numbers of careers appropriate for women.

Academic Performance. The remediation/work experience mix that the STEP treatment delivers was very successful in improving participants' basic skills, as measured by scores on the Metropolitan Achievement Test (MAT). Considering the net impact of treatment gains and control group losses, STEP participants increased their basic skills substantially beyond what they would be in the absence of the program. Participants increased their reading levels by just under one full grade equivalent in Pinellas County, and more than one and one-half grade equivalents in Boston. In math, youths gained half a grade in Pinellas County, and more than one grade in Boston. If grade equivalents changes are calculated on the basis of treatment scores alone, gains ranged from a non-significant .2 of a grade in math in Pinellas to a significant .8 of a grade in math in Boston. Reading gains fell between these points.

Given work experience alone, disadvantaged young people who participated in the Summer Youth Employment Program did earn income and became acquainted with the world of work. However, they suffered sizable losses in the basic skills that could increase their value to employers. Control group youths in Boston and Pinellas County showed losses in reading and math skills over the summer. In Boston, these losses were statistically significant.

Implications for the Full Demonstration

While the bulk of the evidence is encouraging, there were a number of findings that represent causes for concern.

First, there was an unevenness in the quality of the remediation component as it was implemented at the sites. It is too early to know how stable the academic impacts are. Once participants and controls return to their regular school environment, summer impacts could dissipate. Or, it may be that the observed impacts are driven by the losses experienced by a group of control youths who, unlike treatment youths, have no motivation to perform well on the post-test. The remediation component itself must be strengthened if it is to result in lower drop-out rates. But, from a research perspective, it is also important to motivate the control group to take the post-test seriously.

Second, although few participants said that they definitely would not want to return for a second summer, the importance of maintaining a high level of participation makes this a serious concern. The program continuation rate from one summer to the next must be substantial if STEP is to be effective in reducing high school drop-out rates.

Third, evidence regarding the difficulty of changing fertility-related behavior sounds a cautionary note for STEP: this is a difficult area in which to achieve change. Even if it proves possible to achieve significant improvements in academic performance, as the data suggest, such achievement may all go for naught if significant numbers of these youth are involved in early pregnancy and child-rearing.

#

I

INTRODUCTION

The Summer Training and Education Program (STEP) seeks to improve school retention rates and, ultimately, labor market outcomes for disadvantaged youth aged 14 and 15 who have a history of poor academic performance. It proposes to do so by addressing two serious obstacles to high school graduation for members of this target population: poor academic skills and adolescent parenthood. Participants in STEP will have an opportunity to spend two summers in a program that provides both academic remediation and instruction in life planning skills, in addition to the work experience traditionally available to them in summer jobs programs. In the intervening year, they may take part in a voluntary social support component designed to reinforce the gains achieved during the first summer and to create expectations for similar gains in the future.

During the summer of 1984, a pilot of the STEP program model was conducted in three communities: Boston, Massachusetts; Pinellas County, Florida; and Baltimore, Maryland. At each of these sites, a consortium of public and private agencies with experience in the employment and training field was responsible for the development, coordination and implementation of this program. Public/Private Ventures (P/PV), a not-for-profit corporation that seeks strategies to help disadvantaged people become more self-sufficient, had overall management responsibility for this effort. P/PV was responsible for site selection, technical assistance in program design and implementation, and research and evaluation. The lessons and recommendations that emerge from the summer pilot will help determine the essential elements of a full-scale demonstration to be launched in the summer of 1985.

This demonstration will operate in six cities across the United States, and includes program operations and research phases that will continue for seven years. As in the pilot, P/PV will have broad responsibilities for program management of the multi-year demonstration.

For the 1984 pilot, STEP received public and private support from both local and national sources. Of these sources, funds from the Jobs Training Partnership Act (JTPA) and the Ford Foundation were major elements. All three sites were able to augment these funds with local resources.

These resources were brought together in an attempt to redress a problem -- high dropout rates and poor employment outcomes among disadvantaged youth -- that has proved resistant to more than a decade of employment and training programs aimed at its amelioration. In the next section, a brief overview of the problem will be presented. A description of the key features of STEP, an intervention that takes a different approach to the problem's eradication will follow. Finally, the processes by which the pilot sites were selected will be briefly described.

Background

Each year, large numbers of disadvantaged youth enter the labor force without adequate preparation: their basic academic and job skills are unequal to the tasks that they will soon face as young adults. Large numbers will have dropped out of school without having earned a high school diploma, thereby seriously curtailing their long-term employment and earnings prospects.

Research has consistently demonstrated that dropping out of school tends to reduce subsequent labor force participation. According to a recent survey of employers (Malizio and Whitney, 1984), only 18 percent of all jobs are open to persons without a high school degree. Further, the earnings gap between young dropouts and high school graduates increased by 20 percent from the mid-1960's to 1979 (Sum, 1983).

Unsuccessful academic experiences -- performing poorly in classes and failing a grade -- are key factors in the high dropout rate among disadvantaged youth. For instance, (Bachman 1971) has estimated that being held back a grade is associated with a 40- to 50-percent likelihood of dropping out. In addition, studies (see Turnage, 1982, for a review of this literature) have shown that dropouts are likely to have poor grades in reading and mathematics.

Another body of research has shown that summers are critical periods in the academic development of disadvantaged youth. Studies have documented measurable losses in achievement scores over the summer, losses that are particularly pronounced among disadvantaged youth. One author (Heyns, 1978) has estimated that 80 percent of the difference in academic scores of advantaged and disadvantaged youth can be attributed to differential rates of summer learning.

For young women, adolescent pregnancy and childbearing are major complicating factors. As many as three-quarters of female dropouts cite pregnancy and/or marriage as their reason for having left school (Coombs and Cooley, 1968; Trussel, 1976; Presser, 1977). For those young women for whom pregnancy was not an issue in the decision to drop out, subsequent pregnancies and births are often a factor keeping many from returning to school and remaining there long enough to earn a diploma.

The Summer Youth Employment Program (SYEP) -- one of the largest national programs for disadvantaged youth -- comes into contact with large numbers of potential dropouts. As presently structured, it provides summer work experience and income for youth who would otherwise be unlikely to find jobs.

Despite the many young people served over the years, SYEP has met with only limited success in helping its participants make a successful school-to-work transition. Research from a variety of sources indicates that although work experience during high school does pay off in higher rates of post-high school employment, wages and earnings, the payoff of participation in employment and training programs is proportional to the intensity of a participant's educational experience. In other words, high school work experience is more beneficial for a youngster who graduates from high school than for one who drops out (Farkas, 1983).

The Summer Youth Employment Program is a well organized, well-funded, mechanism for serving disadvantaged youth. That fact, combined with evidence that SYEP has yielded only limited long-term benefits, provides the rationale for a basic redesign of the program. The Summer Training and Education Program (STEP) is the prototype for a redesign -- one that augments work experience with academic remediation.

The proposal that SYEP's work experience be supplemented with academic remediation is rooted in several bodies of research. Several studies -- among them the evaluation of the Youth Entitlement Incentive Pilot Projects (Farkas, 1982) -- have found that at-risk youth are most responsive to educational interventions tied to opportunities to earn income and acquire job-related skills. Another body of research (on Jobs Corps participants and disadvantaged high school and college students) has shown that well-designed remedial education programs are capable of producing modest but long-lasting academic gains (Taggart, 1981; Kapsis, 1983).

STEP builds on these findings by integrating work experience, academic remediation and instruction in responsible social and sexual behavior into a single treatment. In the sections that follow, the STEP program model is described in greater detail.

The STEP Model

Objectives. In its pilot phase, STEP focussed on attaining those objectives that could be observed within the course of a single summer. Among them were:

- increasing the academic achievement of participants in reading and math or stemming summer learning losses in these areas;
- increasing participants' ability to make responsible decisions about sexual behavior, thus reducing the likelihood of teenage pregnancy; and
- increasing participants' career awareness.

The central aim of these objectives is to provide participants with the means to stay in high school and earn a diploma. Providing them with remediation and life planning instruction, while safeguarding their ability to earn wages during the summer, should result in a reduction of school dropout rates due to either poor achievement levels or parenthood. The increased motivation and sense of self-esteem that result from the academic successes of the summer are expected to increase participants' educational aspirations and encourage them to continue their pursuit of a high school diploma.

Target Population. STEP targets low-income youth, ages 14 and 15, who have significant educational deficiencies. To qualify for participation in STEP, students must meet the eligibility requirements of the regular Summer Youth Employment Program as set forth in the Job Training and Partnership Act. Accordingly, participants must be economically disadvantaged and at least 14 years of age.

Fourteen-and 15-year-olds were chosen for several reasons. First, at 14 and 15, students are thought to be more responsive to remedial efforts than they are at later ages. Many are also making the critical transition between junior and senior high school -- precisely when the dropout rate begins to accelerate. At this age, too, students are interested in obtaining jobs, but are too young to compete successfully with older youth. Finally, at 14 and 15, students reach the threshold of risk for becoming teenage parents and are, therefore, most in need of information about family planning.

The final eligibility requirement involves educational deficiencies. In the pilot of STEP, for instance, the operational definition of educational deficiency included having been held back in school for one or more years, or having tested one or more grades behind the grade level appropriate to the young person's age in reading, math or both. As will be discussed in Chapter III, each of the three pilot sites employed slightly different criteria for educational deficiency.

The Treatment. Four separate but related components comprise the STEP treatment -- remediation, work experience, life planning and social support. Participants in STEP are eligible for two summer's participation in a program combining the first three of these components. The fourth, the social support component, occurs during the school year and provides a bridge between the two summers.

In the pilot, the total number of hours available in the summer program varied from site to site. In Pinellas County, the total program consisted of 240 hours of treatment; in Boston, 200 hours; and in Baltimore, 180 hours. In each case, the total number of hours available was divided into two roughly equal segments comprised of classroom instruction and work experience. Eighty percent of the classroom instruction segment involved remediation activities; and twenty percent was devoted to the development of life planning skills.

Generally, youth are to be compensated for their participation in both components of the program at the same rate as participants in the Summer Youth Employment Program -- usually minimum wage. In specific instances, however, there may be significant modifications. This may occur when local policies do not permit payment for remediation.

Because STEP is being proposed as an alternative to the regular SYEP, outcomes for youth who participate in STEP will be contrasted with outcomes for a similar group of youth who receive the summer work experience and income traditionally provided by SYEP.

Specific attributes of each of the components of the STEP treatment are discussed below:

The remediation component focuses on providing basic skills instruction, primarily in reading and math, with the aim of producing gains, or, at least, decreasing the losses usually experienced over the summer months. The goal of this component is to provide an intensive educational experience -- one that delivers a minimum of 90 hours of remediation.

The STEP model calls for a remediation curriculum that is individualized, self-paced and competency-based. Such a curriculum defines the competencies toward which learners will work and against which progress is assessed. It specifies what learners must do to demonstrate the required competencies and provides a structure to document their learning. More specifically, competency-based remediation systems must display the following characteristics:

- Prior learning or achievement is determined and accounted for in developing each student's educational program.
- The measure of success is demonstrated learning rather than time spent in a classroom. Students progress through instructional sequences at self-determined rates.
- The specified competencies are carefully identified in demonstrable terms, verified as relevant for the goals of the program, and known in advance to all those concerned (most importantly, the students).

While P/PV was fairly explicit in the articulation of standards for an acceptable curriculum, it was left to the sites to make their own final choice of curriculum. Both computer-assisted instruction and more traditional paper and pencil methods were acceptable modes of presenting the remediation curriculum to STEP students. However, it was hypothesized that computer-assisted instruction would increase the intensity of the remediation by increasing time on task.

Work experience is provided through SYEP and most STEP participants are therefore likely to be employed in entry level jobs in the clerical, maintenance, and parks and recreation fields. Because STEP participants attend classes for half the day, an important part of program implementation involves the cooperation of employers in defining part-time summer jobs for 14 and 15-year olds. Transportation between classes and worksites is another key issue. In response to these problems, the pilot sites placed many participants in jobs at the schools where the educational component of the program was conducted.

The life planning component presents a curriculum aimed at developing responsible social and sexual attitudes and behavior among participating youth. This segment covers such topics as decision-making, workplace behavior, job equality issues and the consequences of teenage parenting. The curriculum, developed by the Center for Population Options under contract to P/PV, runs approximately 18 hours, using lectures, discussions, field trips, role-plays, films and outside speakers. It depicts how long-term personal and career goals can be negatively affected by short-sighted or uninformed choices about sexual activity. The costs and consequences of parenting, particularly in the adolescent years, are explored. Personal relationships and the pressures that they present for young people to become sexually active, are also addressed. This leads to a discussion of the choices available to young people -- among them sexual abstinence or, if sexually active, responsible use of birth control.

The social support component seeks to ensure that participating youth maintain gains achieved during the summer, continue academic achievement during the school year and return to STEP the subsequent summer. Plans for the social support component include counseling, referrals, peer group activities, workshops, parent/student meetings, life planning seminars, job clubs and computer-assisted labs. The specific model adopted will vary from site to site.

Site Selection and Development

Site selection began with the dissemination of a concept paper, "Remediation, Social Competence, and Work Experience for Disadvantaged Youth: Proposal for Redesign of the Summer Youth Employment Program" (Berlin, 1983). This document, which set forth the rationale for STEP, received wide circulation and comment. In response, a number of organizations and individuals in the employment and training field indicated interest in participating in a demonstration. P/PV, as the intermediary organization charged with the overall management of STEP, followed up these expressions of interest with telephone contacts and, where warranted, site visits. In addition, P/PV initiated contact with a number of other organizations known in employment and training circles for their willingness and ability to manage innovative programs.

During the initial site visits, each of the candidate sites was informed of the criteria for pilot site selection. Primary among them were:

- interest in, or previous experience with, programs integrating academic remediation and work experience in summer youth employment programs;

- willingness to cooperate with the key research requirements of the program -- the recruitment of 500 SYEP applicants, to be randomly assigned to experimental and control group conditions; and
- the ability to develop and implement the program within a relatively short time.

Of these factors, the ability to work within the prevailing time constraints proved most decisive in the selection of the three pilot sites.

Of all the sites expressing interest in participating in STEP, fewer than ten, judged by these criteria, were considered serious candidates. In Boston, officials from the Massachusetts Executive Office of Economic Affairs had read the STEP concept paper and had already begun preliminary discussions with the Ford Foundation by January, 1984. P/PV, designated as the demonstration manager, conducted all subsequent negotiations. Beginning with an initial site visit in early March and continuing through a series of meetings that, in mid-April, concluded with the understanding that Boston was indeed a pilot site, P/PV and representatives of the organizations developing the Boston STEP project together resolved the details of the program design.

Similarly, P/PV worked cooperatively with representatives of Pinellas County service agencies to develop major aspects of the program design. Employment and training officials there had already shown interest in providing remediation for youth at risk for dropping out of school and had operated a small remediation component in the 1983 SYEP program. When representatives of P/PV first contacted Pinellas County officials, money had already been set aside for a remediation component in the 1984 SYEP program.

Of the three sites eventually selected to conduct the pilot, Baltimore developed along the most independent lines. Having read the STEP concept paper in January, representatives of Baltimore's Office of Manpower Resources already had a well developed program design when the initial meeting with P/PV took place. Despite substantial variations between the Baltimore and P/PV models -- Baltimore planned to serve only 75 14-year-olds and had no plans for a control group or comparison group -- Baltimore was included because it provided another opportunity to observe a test of STEP's basic concepts. However, because it lacked a control group, the Baltimore site would not contribute to the analysis of program impacts.

The role of the P/PV site coordinator, the person assigned to each site throughout the planning and operational phases, has been critical to P/PV's activity in each site. While the general outlines of this role were similar across sites -- e.g. the site coordinator met periodically with site staff, monitored program implementation, provided technical assistance, served as liaison between P/PV and the site, and coordinated data collection efforts -- the site coordinator's involvement varied substantially across sites. This variation, in turn, explains some of the differences in program implementation to be discussed in Chapter III.

The site coordinators for Baltimore and Pinellas County were based in Philadelphia and were therefore able to make only periodic site visits. In contrast, the site coordinator for Boston was a local resident, and so was able to play a more active role in the development and implementation of that site's program by participating in meetings where critical decisions were made. In addition, this coordinator's efforts were augmented by those of a staff person, who developed a computerized management information system and assumed major responsibility for the pilot's substantial data collection requirements.

Organization of this Report

The aim of this report is to present a broad overview of the 1984 summer pilot of the STEP program, and to assess its effectiveness. Chapter II describes the research design that provides the data upon which this assessment is based. Chapter III describes the key features of the program model as it was developed at each of the participating sites. Chapter IV presents a detailed profile of participating youth -- both treatments and controls. An examination of the impacts of program participation on academic performance and life planning attitudes and behaviors appears in Chapter V. Chapter VI summarizes findings and delineates early program lessons.

II

OVERVIEW OF THE RESEARCH DESIGN

To determine the feasibility of the STEP program model and to assess a number of its short-term program impacts, a broad-based research design was developed. The two major components of this design are an implementation analysis and an impact analysis. The implementation analysis will attempt to delineate early program lessons by describing the processes involved in the planning, coordination and implementation of STEP. The impact analysis examines the short-term effects of STEP on its participants in the specific areas of academic performance, employment-related attitudes and behaviors, and the development of responsible social and sexual attitudes and behaviors. The sections that follow present these components in greater detail.

Implementation Analysis

The implementation analysis examines those factors that have potential for increasing an understanding of their successes and failures in the three pilot sites. Among the topics to be covered are:

- development and coordination of the institutional arrangements -- key individuals, organizations and agreements;
- factors contributing to the design of the remediation, life planning, and work experience components as implemented at each of the sites;
- problems encountered and solutions attempted during implementation;
- any features that appear to have contributed to the success or failure of implementation;

- characteristics of program participants -- their demographic, attitudinal and behavioral profiles;
- precise nature of the treatment -- the kinds of jobs, the hours of work, the type of remediation, the amount of compensation, the content of life planning instruction; and
- participants' responses to key features of the program.

Both quantitative and qualitative data sources are used in the implementation analysis. The qualitative sources include observations of program activities -- remediation classes, work-site sessions and life planning instruction -- as well as interviews with key actors. Quantitative data come from application forms, participants' responses to questionnaires designed to tap responses to key program elements, and program timesheets.

Although insights from the implementation analysis appear throughout this report, they are most in evidence in Chapter III, "The Implementation of STEP," and in the case studies cited in the Appendix.

Impact Analysis

The impact analysis seeks to determine whether STEP has positive effects on its participants' academic, work and social attitudes and behaviors. Specifically, it addresses the hypothesis that participants in STEP, when compared to a group of similar youth not participating in STEP, will:

- experience gains in reading and math, or minimize summer learning losses that might otherwise be anticipated;
- exhibit greater knowledge of methods of birth control and be more likely to use contraception, if sexually active;
- be more aware of the consequences of adolescent pregnancy and parenting;
- be more likely to express attitudes consistent with a belief in the equality of men and women in the workplace; and
- exhibit higher educational and career aspirations.

To test these hypotheses, an experimental design employing random assignment was implemented in Boston and Pinellas County. Of the eligible youth, half were randomly assigned to the treatment group and participated in the STEP program, dividing their time between classroom and work experience components. The remaining youth were assigned to the control group and participated in the regular Summer Youth Employment Program, spending all of their program hours in work experience. Treatment and control group youth in Boston and Pinellas County were compensated equally ($3.25 an hour) for their participation, even when treatment youth attended remediation classes. In Baltimore, participating youth were paid $3.25 an hour for work experience, but were given a stipend for participating in the remediation component.

Random assignment has the effect of creating two equivalent groups, since the chances of any given youth being assigned to the treatment group are no greater than their chances of being assigned to the control group. From a statistical perspective, the treatment and control groups are presumed equivalent, since it is highly unlikely that they will exhibit significant differences in important pre-treatment characteristics.[1] Because the treatment and control groups are equivalent at baseline, any differences observed at follow-up can safely be attributed to the effects of the treatment.

Multivariate analytic techniques were used in the analysis of program impacts to adjust for any differences in the characteristics of the treatment and control groups that are not eliminated by random assignment, and to increase the precision of the estimate of treatment impact. These techniques are presented in greater detail in Chapter V.

Because there was no control group in Baltimore, the impact hypotheses could not be tested at this site. However, outcomes for the Baltimore treatment group are presented to provide additional information about the program's effects on participants.

Program Participation

Random assignment, though the most critical element in the research design, was only one in a fairly complex set of procedures for contact with the sample. Procedures for outreach, application, eligibility verification, intake, random assignment, testing and other data collection efforts varied markedly from one site to another. Because these variations are believed to have affected program implementation in important ways, selection and testing procedures are given further attention in Chapter III. The following discussion, however, extracts key points of contact with sample members that are common to all sites, to illustrate the flow of participants through the program and introduce the analysis sample.

---

[1] Random assignment cannot guarantee equivalence between treatment and control groups. Rather, it has the effect of reducing the likelihood that there will be significant differences between the two to an acceptable level.

Recruitment for STEP was accomplished through the normal outreach and intake procedures already in existence for the regular summer youth program. Students completed applications, which were checked for conformance with JTPA eligibility requirements regarding age, residence and economic disadvantage. Youth meeting P/PV's educational deficits criteria were then asked to obtain parental consent for participation in a study involving random assignment and, if assigned to the treatment group, for participation in a program involving academic remediation and life planning instruction. Finally, their consent was sought for the release of school records data for research purposes.

Boston and Pinellas County employed somewhat different procedures for accomplishing random assignment. In Boston, to attain city-wide participation in the program, the list of applicants was stratified according to the neighborhoods from which they were recruited. Within each stratum, matched pairs were formed based upon reading scores made available by the Boston Public Schools. One student from each pair was randomly assigned to the treatment group, and one to the control group. In Pinellas County as well, random assignment was completed within strata corresponding to the three major communities within the Service Delivery Area (SDA) -- St. Petersburg, Clearwater and Largo. Unlike Boston, however, participants were not matched prior to random assignment.

Once randomly assigned, both treatments and controls were administered P/PV's baseline questionnaire, and were pre-tested for reading, math and (in Baltimore) language arts abilities. Several make-up sessions were arranged to reach students who missed the first administration. Despite these efforts, some of the youth in the assignment samples for Boston and Pinellas County were not pre-tested or administered a baseline interview. Further, although administration of the baseline interview and pre-testing took place within the same session, some students managed to complete only one of these documents. Further sample loss occurred immediately after testing.

The final research contact with members of the STEP pilot sample came at the program's conclusion when participants were tested again for reading, math and (in Baltimore) language arts, and were administered a follow-up questionnaire. As with the pre-test session, efforts were made to post-test all members of the assignment sample -- including no-shows, drop-outs and absentees. These efforts included scheduling the initial testing session during regular (paid) work or remediation sessions, telling youth that they could get their last paycheck only after they had been tested, scheduling make-up sessions for which students would be paid, and telephoning no-shows and drop-outs.

Given the resulting variation from participant to participant in the availability of key sources of data, it became necessary to define different analysis samples for the different research questions addressed in this report. Table II-1 summarizes the decisions made regarding the appropriate sample for each of the major research topics.[2]

---

[2] Within these samples one still encounters missing data on a variable by variable basis. For simple descriptive analysis, a participant with missing data on a given variable is omitted from the sample and statistics are calculated for the sample for whom there are valid observations.

TABLE II-1

STEP DATA BASE, BY SOURCE

Variable	Data Source
Demographic Characteristics	Application Forms
Age	Boston School Records
Race	Baseline Questionnaire
AFDC Receipt	
Percent in Single Parent Households	
Marital Status	
Academic Performance	Metropolitan Achievement Test (MAT), Survey Battery, Advanced Level 1, Forms JS and KS
Reading	
Mathematics	
Language (Baltimore only)	
Education	Application Forms
Highest Grade Completed	Boston School Records
Ever Repeated a Grade	Baseline Questionnaire
Grade Repeated	
Educational Aspirations	
Fertility/Family Planning	Baseline Questionnaire
Percent Sexually Active	Follow-up Questionnaire
Contraceptive Utilization	
Percent with Own Children	
Birth Control Knowledge	
Knowledge of Consequences of Adolescent Pregnancy	
Employment-Related	Baseline Questionnaire
Previous Employment	Follow-Up Questionnaire
Career Aspirations	
Attitudes toward the Work Roles of Men and Women	
Response to STEP	Follow-Up Questionnaire
Component Most Valued	
Component Least Valued	
Preference for Remediation/Work Experience Balance	
Preference for Computer/Workbook Balance	
Reaction to Life Planning	
Hours in Work Experience and Remediation	Program Timesheets

The primary analysis sample for the STEP pilot is the 760 students:

- who were "assigned" (to treatment or control conditions in Boston and Pinellas County, or the treatment group in Baltimore);
- for whom P/PV has critical application form data, whether from the forms themselves or from alternate sources such as Boston school records;
- who completed baseline questionnaires; and
- who participated in the program -- e.g. had at least one paid program hour.

This is the sample presented in Chapter IV, "A Profile of STEP Participants."

Data from a similar sample -- e.g. all sample members with adequate demographic and program hours data who participated in the program at all, regardless of whether or when they dropped out or if they took the post-test -- form the basis for discussions of sample attrition and program hours.

For the life planning analysis, the sample consists of the 688 students who both met the four criteria for the primary analysis sample and who completed a follow-up questionnaire. This follow-up questionnaire is the only document with detailed questions about post-program attitudes toward work, sexuality and life goals. Similarly, it is the only data collection instrument that asks for participant responses to the STEP treatment. Thus, the sections in Chapter III on STEP's reception reflect the views of the 393 participants who completed this follow-up questionnaire in addition to meeting the criteria for inclusion in the primary sample.

For the analysis of learning gains, the sample consists of the 553 participants who met the primary sample criteria and who, in addition, completed a pre-test and post-test.

Data Sources

As the participation analysis makes clear, a fairly sizeable data base was assembled for the STEP pilot. These data elements and their sources are summarized in Table II-2. As it shows, the primary measure of academic performance is the Metropolitan Achievement Test (MAT), a test of achievement in important areas of the school curriculum. The Survey Battery, a subset of the larger Instructional Test, provides a global evaluation of performance in reading, mathematics and several other content areas. It consists of 55 items in the reading comprehension subtest, meant to be completed in 35 minutes, and 40 items in the mathematics subtest, which has a 50 minute time limit. A number of overlapping batteries in the Survey cover the grade ranges from the beginning of kindergarten to the end of Grade 12. The battery chosen for the STEP pilot is the Advanced Level 1, which is most sensitive for students performing in the 7.0 to 9.9 grade-level range. The two forms of this test -- Forms JS and KS -- are functionally equivalent. That is, although the items are different, they are judged to be of approximately equal difficulty. This makes it possible to administer one form as a pre-test and then, ensuring against memory effects, to administer the alternate form as a post-test. This in fact was the procedure in the STEP pilot.

TABLE II-2

STEP ANALYSIS SAMPLES, BY SAMPLE SIZE

Analysis Samples	Minimum Data Requirements	Sample Size
Profile of Participants	Primary Sample Requirements ● Application Data ● Baseline Questionnaire ● Paid Hours > 0	760
Attrition and Program Hours	Primary Sample Requirements Complete Program Hours Pretest	465
Life Planning Outcomes	Primary Sample Requirements Follow-up Questionnaire	688
Reaction to STEP (Treatment Group Only)	Primary Sample Requirements Follow-up Questionnaire	393
Learning Outcomes	Primary Sample Requirements Pre-test and Post-Test	553

The SYEP application form and the P/PV baseline questionnaire are the sources for demographic characteristics of the sample, among them age, race, sex, AFDC receipt, household size, income, marital status, highest grade completed, and a self-report on grade retention. The baseline questionnaire is also the source for pre-test measures of a number of program-relevant attitudes, knowledge and behaviors including: occupational/career aspirations, educational aspirations, attitudes toward the work roles of men and women, birth control knowledge, and awareness of the consequences of adolescent pregnancy.

Program timesheets, from which hours of work and remediation are derived, are another important data source. The follow-up questionnaire, which asks treatment youth which elements of the program they liked most and least and found most and least valuable, is the source for measuring participants' reactions to STEP. The follow-up questionnaire also serves as the source of post-test data on life planning outcomes.

CHAPTER III

THE IMPLEMENTATION OF STEP

This chapter describes STEP as it was implemented in the three pilot sites and attempts to draw general lessons from that experience. The chapter begins with an overview of the programs in Pinellas County, Florida; Boston, Massachusetts; and Baltimore, Maryland and introduces the key actors and organizations at each site. The chapter continues with a comparison of the remediation programs offered, a description of the work experience component, a review of the life planning component, and a discussion of participant recruitment and selection.

Each section compares and contrasts the experience of each site in order to provide insight into the nature of the treatment, delineate factors that contributed to approaches that were implemented, and assess features that appear to have contributed to program strengths and weaknesses. STEP participants provided program assessments that are an important part of this analysis. (STEP participants and members of the control group are profiled in Chapter IV).

More complete documentation of STEP implementation at each of the participating sites is presented in the case studies.

OVERVIEW OF THE SITES

Each of the three pilot sites employed somewhat different strategies to achieve program objectives. This section will present the strategies used by each in terms of the sponsoring agencies involved, participants targetted, and the remediation, work experience and life planning components of the program.

The Boston Experience

STEP was run by several organizations that saw the program as a catalyst of permanent change in the summer program, and as a way to focus on the need for remediation by students at risk of dropping out of school. The Neighborhood Development and Employment Agency (NDEA) and the Boston Private Industry Council (PIC) sponsored the program and shared oversight responsibilities. They contracted with Action for Boston Community Development (ABCD), the anti-poverty agency that has run the summer jobs program for the past 18 years, to operate STEP. ABCD was responsible for intake and eligibility determination, developing worksites, counseling youth, and payroll functions. ABCD, in turn, subcontracted with seven educational institutions to provide remediation. These included: Boston University, the University of Massachusetts, Northeastern University, Suffolk University, Roxbury Community College, Bunker Hill Community College, and the Hubert Humphrey Occupational Resource Center. Boston Public Schools provided access to school records and the Boston Compact staff was responsible for school year follow-up activities. Special funding for the project was made available by the Boston Housing Authority, the Bay State Skills Corporation, and the Governor's Executive Office of Economic Affairs. STEP ran for eight weeks beginning on July 5, 1984.

The Boston program served 14-and-15-year-old JTPA-eligible youth who had failed a grade within the past five years and/or tested at least one year behind in reading on the Metropolitan Achievement Test. Those reading below the 4th grade level were not selected for the program. At the beginning of the summer, 517 youth met these eligibility criteria, signed consent forms, and were randomly assigned to the treatment or control groups.

Treatment youths were assigned to one of the seven university sites where they received remediation, life planning instruction, and worked at mostly traditional summer jobs. A few non-traditional work projects were offered, including painting a mural at Bunker Hill, producing a newspaper at Suffolk, and learning word processing and data entry at the Occupational Resource Center. Approximately 50 students were assigned to the Boston University, University of Massachusetts and Occupational Resource Center sites and about 25 students were assigned to the other four.

With the exception of Roxbury Community College, remediation was delivered during the morning hours and work experience took place in the afternoon. The remediation programs differed significantly at each of the seven sites, but all sites utilized basic reading and math competencies that had recently been promulgated by the Boston Public Schools. Only the Occupational Resource Center provided computer-assisted instruction, utilizing the Dolphin system.

Treatment youths were paid at the minimum wage for hours spent in work experience as well as for hours of remediation. A total of 180 hours was spent by treatment youths in work experience and math and reading remediation. The life planning component -- delivered by three special instructors from outside agencies and staff from ABCD's Family Planning Program -- consumed 20 hours of the program. Instructors made rotating visits to the seven sites twice a week for 90-minute sessions. Compensation at the minimum wage for 20 hours of life planning brought the total compensated hours for treatment youths to 200, thereby equalizing compensation between treatments and controls.

Control group youths were assigned to regular SYEP worksites throughout the city. They worked a total of 200 hours over the summer and were paid at the minimum wage.

The Pinellas County Experience

In Pinellas County, STEP was operated by the Pinellas County Division of Employment and Training, the Professional Employment and Training Service (PETS), the Juvenile Services Project (JSP) and the Occupational Industrialization Center (OIC). The Division of Employment and Training was the overall sponsor of the STEP project in Pinellas County. PETS was responsible for operations, including: recruitment, intake, worksite development, assignment of youth to remediation and worksites, and financial management. JSP delivered remediation and life planning sessions and administered standardized tests. A computer bus, made available by the Eckert Foundation, was used to provide computer-assisted instruction for the remediation. In addition, OIC provided remediation at one site under the direction of JSP. Because of the Board's opposition to paying youth for remediation, the Pinellas County school system did not participate in the STEP project. For this reason, P/PV did not have access to school records data.

Pinellas County served 14 and 15 year-olds who were JTPA-eligible and who appeared to have failed one or two grades in school, based on their stated age and grade. Three hundred and sixty youths initially consented to participate and were randomized to either the treatment or control groups.

Remediation and life planning sessions were delivered at three sites throughout the county by public school teachers on vacation. The curriculum, developed by JSP, utilized the

Milliken Series and CCP computer-assisted and pencil-and-paper materials. Math and reading lessons were scheduled in two sessions -- one morning and one afternoon. Life planning sessions were held twice weekly for 90-minute segments.

Work and remediation sites for treatment youths were in different locations. They were assigned to regular SYEP jobs throughout the county. Bus transportation was provided at mid-day. Generally, job-sharing -- two treatment youths holding one job -- was utilized for STEP participants. Control group members were assigned to regular summer jobs. Control youths worked 30 hours per week for eight weeks, yielding a total of 240 hours. Treatment youths worked 15 hours a week and received instruction for 15 hours, for a total of 240 also. The time was divided as follows: 120 hours work, 90 hours remediation, 18 hours life planning, and 12 hours functional competencies. Both groups were paid for every hour at the minimum wage rate.

The Baltimore Experience

The STEP pilot test, called Student Adventures in Learning (Project SAIL), was undertaken by the Office of Manpower Resources within Baltimore's new Neighborhood Progress Administration. The Baltimore program deviated in several ways from the basic STEP model. For example, there was no random assignment of eligible youths to treatment and control groups. Nevertheless, the program delivered part-time work and part-time remediation to JTPA-eligible youth and was, for many reasons, worthy of careful attention during the pilot test summer. The Office of Manpower Resources enlisted the participation of the school system in recruiting youth, delivering remediation and providing jobs. Baltimore Planned Parenthood staff and consultants from the Center for Population Options delivered the locally-adapted life planning curriculum.

The Baltimore program served 14 year olds who were JTPA-eligible and recommended by their junior high schools. They were youths who had just completed the eighth grade, tested below norm, had attendance records between 70 and 80 percent, and were judged by school staff to be both "at risk" of dropping out, and likely to benefit from the program. Seventy-three students were recruited into the program; at this site, there was no control group.

Three high schools were chosen to serve as remediation sites. The curriculum utilized Hayes pencil-and-paper materials, supplemented by Computer Curriculum Corporation materials for the four microcomputers at each site. Teachers were assisted by 17 JTPA-eligible high school seniors who served as tutors. Custodial, maintenance and painting jobs were provided for youths at the remediation sites.

The Baltimore program ran for eight weeks. For the first six weeks, participants attended three hours of class (unpaid, four days/week) and three hours of work (paid, five days/week). Functional competency seminars were held once a week for three hours. During the last two weeks, youths who had achieved an 85 percent attendance rate were given the opportunity to participate in a series of functional competency workshops and life planning classes. They were paid for attending those sessions. Thus, the total number of hours was 168 (paid) plus 72 hours of unpaid remedial education.

Finally, the Baltimore pilot program's life planning component varied from those in other sites. Staff from the local office of Planned Parenthood collaborated with P/PV's curriculum development consultants to adapt the lesson plans. Rather than delivering the program in 90-minute modules throughout the summer, Baltimore youth attended two full-day seminars.

Table III-I summarizes the roles and responsibilities of key actors in each of the three sites. The remainder of this chapter discusses the major program components and draws cross-site comparisons.

THE PARTICIPANT SELECTION PROCESS

In the section that follows, the process by which participants, both treatments and controls, came to participate in the STEP pilot is described. This sets the stage for the discussion of sample characteristics that appears in Chapter IV.

Recruitment

In Boston and Pinellas County, STEP recruitment and intake were part of the regular Summer Youth Employment Program. In both sites, participants were youths who would have applied for and enrolled in the regular SYEP program in the absence of STEP. While Pinellas County attempted to conduct special targeted outreach through the media, schools and community agencies, this took place too late in the summer to be effective.

By contrast, Baltimore participants had not applied for a job from the Summer Youth Employment Program. Instead, they were hand-picked for the program by their junior high school principals and referred to OMR's Summer Youth Corps office for screening for JTPA (economic) eligibility.

TABLE III-1

ROLES AND RESPONSIBILITIES OF PRINCIPAL LOCAL ACTORS

Local Actors	Oversee E & T Programs	Service Delivery Area (SDA)	Operate SYEP	Recruit/ Select Youth	Develop Curriculum	Deliver Remediation	Recruit/ Monitor Worksites	Deliver Life Planning	Operate Social Support	Provide Additional Funds
Boston										
Neighborhood Development & Employment Agency (NDEA)	X	X								
Private Industry Council	X									X
Action for Boston Community Development			X	X			X	X		
7 Universities					X	X	X			X
Boston Compact									X	
Boston Housing Authority										X
Bay State Skills Corp.										X
Mass. Executive Office of Economic Affairs										X
Pinellas County										
Division of E & T	X	X							X	X
Private Industry Council	X									
Professional E & T Service			X	X			X			
Juvenile Service Program					X	X		X		
OIC						X				X
Board of Education										
Baltimore										
Office of Manpower Resources	X	X	X						X	X
Department of Education				X	X	X	X	X	X	X
Fund for Educational Excellence (Mayor's Office										X

BEST COPY AVAILABLE

Eligibility Criteria

As explained, STEP targets 14-and 15-year-olds because they are believed to be more responsive to remediation efforts than are older youth. They are interested in obtaining jobs, yet too young to compete successfully with older youth; they are at risk of becoming teenage parents; and, at 14, they are the youngest age group that can be served by the federally-funded summer youth employment and training program. Pinellas County and Boston served youth who were 14 and 15 years old; Baltimore restricted its sample to 14 year-olds.

In concept, STEP is intended to serve youth who are at risk of not completing high school. Therefore, in addition to meeting JTPA criteria, youth judged to be "educationally deficient" were targeted for participation in STEP. Each of the sites used a different definition of educational deficiency. In Boston, information from the Boston Public Schools was used to screen 14- and 15-year-old applicants. Using these data, youths who had either failed a grade or tested below grade level on the MAT were selected for participation in STEP.

In Pinellas County, PETS staff used self-report data on age and grade to identify students who appeared to be "age-grade retarded" and who therefore had probably failed a grade. The application of this "rule-of-thumb" was used to test the feasibility of selecting participants on the basis of self-report when data from school records are not available.

Baltimore selected youths who had tested one to three grades behind in reading, math or language arts on the California Achievement Test and who had demonstrated educational deficiency by low or failing grades in one or more of these subjects.

Baltimore utilized several other eligibility criteria as well: eligible youths must have just completed the eighth grade, have had a 70-80 percent attendance record, and be "likely to benefit" from the program in the judgement of junior high school personnel.

In addition, all sites set floors, or educational cutoffs. Boston excluded youths who read below the fourth grade level; Baltimore screened out anyone who tested more than three years behind in reading, math or language arts; and Pinellas County excluded youths who were more than two grades behind. In addition, Pinellas County excluded youths who were blind or severely handicapped.

The Boston and Baltimore programs were restricted to students from the public schools; the Pinellas County program was not. In Boston, this restriction was made because the data needed for participant selection were available only from the Boston Public Schools. In Baltimore, the program was school-focused -- only serving participants enrolled in three public high schools.

All three sites required parents and/or students to sign a consent form agreeing to participate in STEP and authorizing release of school and JTPA data to P/PV. In Pinellas County, all applicants were required to report in person with their parents for a personal intake interview. In Boston, forms were sent to the youths' public school during the last week of class and to their homes. Since everyone signing the consent form was guaranteed a summer job, it is understandable that very few declined.

Random Assignment

In Boston and Pinellas County, all eligible youths were assigned at random to either the treatment or control groups; Baltimore had no control group. In Boston, P/PV staff performed all tasks associated with matching youths (on 1983 MAT reading scores) and conducting random assignment in each of 14 Boston neighborhoods. In Pinellas County, program staff randomly assigned eligible applicants to treatment or control groups under the direction of P/PV staff. Like Boston, the Pinellas County sample was also stratified by residence. It should be noted that in both cases, random assignment resulted in treatment and control groups whose baseline profiles -- including pre-test scores in reading and math -- were remarkably similar.

Site Differences

The participant outreach and selection procedures described above yielded a pool of participants that differed significantly from site to site. In Boston, the enrollment target of 500 youth was exceeded; a total of 517 students were assigned to treatment or control groups. In Pinellas County, on the other hand, this enrollment target was not met; only 359 youths were enrolled.

The shortfall in Pinellas County seems related to a number of program implementation issues, among them the use of educational deficiency criteria that, in comparision with the dual measure employed in Boston, restricted the pool of eligible participants; lack of access to school records data on educational characteristics of potential applicants; and an outreach procedure that was implemented too late to be effective.

On the other hand, the shortfall may be related to the fact that Pinellas County is much smaller than Boston, and has a smaller pool of eligible youth. The 1980 Census shows that there were 7,193 low-income families with children ages 15-17 in Pinellas County and 12,390 such low-income families in Boston. While this is not a precise measure of the number of eligible 14 and 15 year-olds living in these locales in 1984, it does provide some indication of the relative size of the pools.

ACADEMIC REMEDIATION

Pilot sites were selected for their interest and/or experience in supplementing SYETP work experience with academic remediation, and for their presumed ability to implement an appropriate remediation curriculum within a short period of time. According to program guidelines, an acceptable remediation component was one that was competency-based and provided an intensive, prescriptive, and individualized educational experience in reading and math. The treatment would include 90 hours or more of remediation spread over the six to eight weeks of the summer program, at the rate of two to three hours per day. Sites were asked to select academic remediation curricula that met these criteria.

Component Development

In Pinellas County, the remediation component was developed and delivered by the Juvenile Services Program (JSP), an agency with ten years' experience in developing educational programs to address the needs of at-risk youth. JSP's existing curriculum was supplemented with computer-assisted, self-paced learning materials, and a local consultant was hired to integrate the pencil-and-paper tasks and computer-assisted materials.

In Baltimore, the Office of Manpower Resources (OMR) initially took the lead in selecting curriculum materials; the public school system was responsible for delivering the remediation component. Baltimore's plans had originally called for installation of the Comprehensive Competencies Program (CCP) developed by the Remediation and Training Institute of Alexandria, Virginia. Because of concerns about the amount of time required for staff training to utilize this system properly, OMR changed these plans. Instead, a curriculum specialist from the school system was able to identify a software package and a series of exercise workbooks complementary to the available computer hardware.

The curriculum development process in Boston was complicated by the fact that seven universities were selected to deliver the remediation. The choice of these remediation vendors was a key decision, one that shaped the character of the Boston pilot. Believing that each university had experience in running remedial education programs, Boston STEP staff thought it unnecessary to provide a centralized curriculum or to place too many constraints on the programs. Therefore, Boston STEP included seven different programs with different materials and different teachers.[1]

---

[1] The Boston case study presents a more detailed description of the seven remediation sites and the way they shaped the character of the STEP program. It describes, for instance, the variation among remediation curricula implemented at these sites and makes some judgements regarding their relative effectiveness.

Remediation Delivery

Characteristics of the remediation component as implemented in the pilot sites are presented in Table III-2. As it shows, both Boston and Pinellas County offered the treatment group 90 hours of remediation, spread over five days per week for eight calendar weeks. In contrast, the Baltimore program offered four half-days per week of instruction over six weeks, yielding a total of 72 hours of planned instruction. In actuality, Boston treatment youth received an average of 77 remediation hours and Pinellas County youth an average of 83 hours. Data on actual hours of remediation are not available for Baltimore.

Youths in Boston and Pinellas County were paid the minimum wage for remediation hours. Baltimore participants were not paid at all for hours spent in class. Instead, in order to equalize their pay with that of youths in SYEP they participated in paid workshops for two weeks at the end of the program. In other words, STEP youth in Baltimore had to participate for more hours in order to earn as much as youth in the regular SYEP program.

All three pilot sites made extensive use of public school teachers on summer vacation, regardless of where remediation occurred. In Boston, university staff were also involved. In addition, all three sites utilized tutors or instructional aides in the classrooms. The Baltimore model is particularly interesting in this regard. Tutors were selected from among entering seniors at the three participating high schools. They were chosen on the basis of JTPA-eligibility and strong academic performance. Each tutor was responsible for helping four students -- two in the morning and two in the afternoon. Under the supervision of the instructor, the tutors prepared lesson plans, monitored student progress and corrected papers.

TABLE III-2
REMEDIATION COMPONENT CHARACTERISTICS BY SITE

Remediation Component Characteristics	Sites		
	Boston	Pinellas	Baltimore
Length of program (weeks)	8	8	6
Number of days per week	5	5	4
Number of sites	7	3	3
Hours of instruction			
- Planned	90	90	72
- Actual (Mean Hours)	77	83	na
Number of sites offering computer-assisted instruction	1	3	3
Remediation schedule	a.m. only	a.m. & p.m.	a.m. & p.m.
Primary sources of teaching staff	Public school teachers with aides	Public school teachers with aides	Public school teachers with tutors
Computer hardware used	Digital	Apple II	CCC
Computer software used	Dolphin	Apple & Milliken	CCC
Percent time spent on computers as reported by students	29%[a]	41%	40%
Percent time spent on computers as reported by staff	na	19%	13%
Percent time students would like to spend on computers	67%	60%	79%

[a] Computer-assisted instruction was available at only one of Boston's seven remediation sites -- the Occupational Resource Center. Students at this site reported having spent 29% of their time on the computer.

na = not available

While not required to do so, the pilot sites were encouraged to utilize computer-assisted instruction (CAI). With the exception of the Occupational Resource Center (ORC) in Boston, however, none of the sites had pre-existing computer hardware that could be utilized for STEP. Baltimore leased Computer Curriculum Corporation (CCC) minicomputers and used CCC software. The Pinellas County program received a gift of Apple II computers (on a computer bus) from the Eckert Foundation and used Apple and Milliken software. Boston's ORC made available Digital equipment to run the Dolphin software package. None of the universities in the Boston programs utilized computer-assisted instruction.

Table III-2 also summarized the computer-assisted instruction received by the treatment group, as reported by program staff and by the youth themselves. As it shows, students perceived that they spent a much higher proportion of their time on the machines than that reported by staff. Nevertheless, when asked how much time they would like to have spent, they wanted even more. While it is generally thought to be unsound to devote such a high proportion of time to computer work, student responses clearly reflect a very positive evaluation of computer assistance.

Enrollee Assessment of Remediation

At the end of the summer, enrollees completed a follow-up questionnaire that asked for their assessment of the STEP program. Their responses to questions on remediation are shown in Table III-3. Members of the treatment group in all three sites were remarkably consistent in their responses to the classroom experience. Just under half said that the classes were more interesting than regular school classes: 42 percent in Boston, 48 percent in Pinellas County and 45 percent in Baltimore. On the other hand, only 18 percent at each of the

TABLE III-3

TREATMENT STUDENT ASSESSMENTS OF REMEDIATION, BY SITE

Assessment Criteria	Percentage Distribution of Students, By Site		
	Boston	Pinellas	Baltimore
Students finding classes more interesting than regular school	42%	48%	45%
Students finding classes about the same as regular school	39%	34%	37%
Students finding classes less interesting than regular school	18%	18%	18%
Students preferring to work all day	40%	51%	65%
Students preferring to work half a day and go to school half a day	54%	42%	29%
Students preferring all day classes	5%	5%	6%
Students who would recommend STEP to a friend	80%	88%	79%
Students who would like to participate in STEP a second year	43%	65%	29%
Students unsure about participating a second year	48%	30%	61%
Students not wishing to participate a second year	8%	5%	11%
Total in Sample	413	207	68

sites found STEP classes to be less interesting than regular school. Given the choice, about half the students would prefer to work all day and half would rather continue with the schedule of half work and half remediation. Very few participants would have preferred to attend classes all day.

Youths were also asked to report the most important aspect of their summer experiences. They were given an opportunity to select from two choices related to remediation, two related to life planning and three related to work experience. Two choices -- "got better in reading" and "got better in math" -- captured the importance of the remedial education component. Remediation was judged as most important by 11 percent of treatment youth in Boston, 5 percent selecting reading gains and 6 percent selecting math gains. In Pinellas County, 8 percent chose reading gains as the most important program benefit, and 2 percent chose math. In Baltimore these percentages were 21 percent and 5 percent respectively. This is presented in Table III-4.

Two points merit discussion. First, a surprisingly high proportion of Baltimore youth rated academic gains as being of primary importance to them. This seems inconsistent with the earlier finding that Baltimore participants would have preferred to work all day (as compared to part-time work and part-time remediation). Second, it is interesting to note that gains in reading were rated as being of much greater importance to youth in Baltimore and Pinellas County than were gains in math. As will be discussed in Chapter V, however, the more dramatic gains were made in math.

TABLE III-4

MOST IMPORTANT COMPONENT OF STEP AS REPORTED BY PARTICIPANTS

Program Component	Boston		Pinellas		Baltimore
	Treatment	Control	Treatment	Control	Treatment
Remediation	11%	na	10%	na	26%
Work Experience	32%	57%	35%	69%	29%
Life Planning	31%	na	29%	na	19%
Total in Sample	197	216	128	79	68

na = not available

Reprise: Remediation

A number of observations seem warranted by the sites' attempts to develop and deliver an acceptable remediation component. It appears that the remediation component was implemented with a reasonable degree of success. Most sites were able to identify curricula that were consistent with program guidelines and, for those sites delivering computer-assisted instruction, compatible software and hardware. Exceptions were the few remediation sites in Boston that did not function smoothly. In one site, for instance, a mid-course correction had to be made when it was discovered that the separation between remediation and work experience was not being adequately maintained.

It should be pointed out that at all sites the hours of remediation actually delivered fell short of the 90 hours planned. This can be prevented in the future if such activities as testing and field trips are not permitted to encroach upon remediation hours.

In spite of program efforts to create a remediation component that was interesting and attractive, participants did not respond as positively as could be desired. The percentage of participants rating remediation as the most important component of the program ranged from 10 percent in Pinellas to 26 percent in Boston. As we shall see, this was the lowest rating given any program component. Perhaps more importantly, fewer than half the participants found the STEP remediation classes more interesting than regular school. If STEP is to be successful in maintaining participation from one summer to the next, it is important to find ways of holding participants' interest. Increasing the amount of computer time may have this effect -- participants generally wanted more "hands-on" time than was available.

WORK EXPERIENCE

Participating sites demonstrated their ability to develop part-time jobs for youth receiving remediation as part of the STEP pilot. In both Boston and Baltimore, treatment youths were assigned to part-time jobs at the remediation sites. If they received remediation in reading and math at Boston University, for example, they also worked at part-time jobs on the BU campus. In Baltimore, youths were assigned to jobs at the high schools where they were studying. This meant that the universities or the high schools actually developed jobs and made job assignments for the treatment group. This approach was adopted in order to eliminate transportation problems and maintain a single timesheet for each enrollee.

Boston participants studied in the morning and worked in the afternoon. In Baltimore, there were split shifts that alternated weekly. For one week half the youths studied in the morning and half in the afternoon. In the next week their schedules were reversed. In contrast, Pinellas County treatment youths did not work at their remediation sites. Program staff rented buses from the local Head Start program to transport youths between their remediation and work sites. Job development was handled by PETS, which assigned both treatment and control group youths to the same work sites. Pinellas County developed split-shift worksites so that one youth worked in the morning and a second worked at the same job in the afternoon. However, Pinellas County staff reported that it was difficult to develop such jobs; worksite supervisors found it disruptive to have two groups of workers and twice as much paperwork. The number of hours youths actually worked, along with other characteristics of the work sites, is shown in Table III-5.

The type of jobs developed for the three sites differed considerably. While the majority of jobs in Pinellas County were maintenance-related (54 percent for treatment jobs and 58 percent for controls), there were also many recreation, tutoring and child care jobs (37 percent and 27 percent for treatment and control group youths, respectively). These jobs are included in the human service classification. In Baltimore, the majority of jobs (87 percent) involved maintenance, yard or clean-up work.

In Boston, control group jobs were primarily maintenance (28 percent) and recreation (54 percent), as in Pinellas County. However, treatment jobs involved an unusually high proportion of clerical assignments (41 percent). In some cases, treatment jobs in Boston were quite different from the usual summer job. For example, youths at Suffolk University produced a newspaper, taking responsibility for research, interviewing, writing, editing and layout. At Bunker Hill Community College, youths planted a garden and painted a mural. At ORC, youths had computer-related jobs including word processing and data entry.

Enrollee Assessment of Work Experience

At the end of the summer, enrollees were asked to assess certain aspects of their jobs. As shown in Table III-6, the jobs held by treatment and control group youth in Pinellas County were quite similar in their physical and mental requirements. Though a large number of treatment and control group youth perceived their summer jobs as being about equally physical and mental (44 percent treatment, 32 percent control), about half reported that

TABLE III-5

CHARACTERISTICS OF THE WORK EXPERIENCE COMPONENT OF STEP

Work Experience Component Characteristics	Boston		Pinellas		Baltimore
	Treatment	Control	Treatment	Control	Treatment
Number of Weeks Worked	8	8	8	8	6
Number of Hours					
- Planned	90	200	120	240	90
- Actual	87	180	103	185	na
Job Types Held					
- Maintenance	26%	23%	54%	58%	9%
- Clerical	41%	12%	7%	2%	87%
- Human Services	6%	54%	37%	27%	3%
- Other	27%	8%	3%	12%	1%
Total in Sample	197	216	128	79	68

na = not available

TABLE III-6

PARTICIPANT ASSESSMENTS OF THE WORK EXPERIENCE COMPONENT OF STEP

	Distribution of Students by Site and Group				
	Boston		Pinellas		Baltimore
Job Related Factors	Treatment	Control	Treatment	Control	Treatment
Job Requirements					
- Most Physical	24%	44%	45%	55%	19%
- Equally Mental and Physical	56%	50%	44%	32%	72%
- Mostly Mental	19%	7%	11%	13%	9%
Job Rules					
- More Strict Than for Regular Employees	19%	13%	17%	12%	38%
- Same as Regular Employees	29%	40%	48%	46%	41%
- Less Strict Than for Regular Employees	16%	17%	19%	29%	13%
- Don't Know	35%	30%	17%	13%	7%
Job Characteristics					
- Interesting Job	55%	57%	60%	53%	62%
- Insufficient Work	17%	7%	13%	17%	13%
- Easy to Learn	51%	56%	68%	58%	65%
- Too Hard	4%	4%	7%	13%	1%
- Enough Time to Relax and Enjoy the Work	61%	62%	69%	61%	54%
- Too Much Free Time	9%	5%	9%	11%	3%
- Usually or Always Busy	86%	90%	91%	91%	97%
Job Problems					
- Hours Too Hard	16%	27%	14%	32%	12%
- Problems Keeping Up	19%	13%	22%	21%	24%
- Insufficient Earnings	39%	43%	31%	45%	62%
- Insufficient Work	30%	17%	30%	34%	16%
- Other	9%	10%	22%	17%	8%
Total in Sample	197	216	128	79	68

their jobs had been primarily physical (45 percent treatment, 55 percent control), and a much smaller percentage reported that their jobs were primarily mental (11 percent treatment, 13 percent control). In Boston, the treatment group had a far smaller proportion of physical jobs (24 percent treatment, 44 percent control), and a much higher percentage of jobs that required mostly mental skills (19 percent treatment, 7 percent control).

Youths were asked to indicate how busy they were during the summer. In most cases, they said they were usually or always busy. However, 24 percent of youth in Boston, (17 percent treatment, 7 percent control); 30 percent in Pinellas County (13 percent treatment, 17 percent control) and 13 percent in Baltimore felt that their employers did not have enough work to keep them busy. Taken together, these responses do not seem out of the range of responses to ordinary summer youth jobs.

Over three-quarters of the youth found earning some money to be a benefit of program participation; this was the most important program benefit for just over one-quarter of the sample. Responses were consistent for both treatment and control youth, and were the same for all three sites. However, Baltimore youths felt that they did not earn enough money. Sixty-two percent, as compared with 39 percent and 31 percent of the treatment groups in Boston and Pinellas County, felt this way.

A sizable percentage of the youth reported having "learned a specific work skill" and/or having "learned more about work in general" during the program. These two choices captured the importance of the work experience component, net of the income it generated. Work experience was judged as the most important program component by 32 percent, 35 percent and 29 percent of treatment youth in Boston, Pinellas County and Baltimore, respectively. Fifty-seven percent of Boston's control group and 69 percent of Pinellas County's found work experience the most important program component (see Table III-4).

Reprise: Work Experience

The work experience component of STEP was implemented without difficulty. Significantly, the fact that participants were in classes half the day seems not to have posed very many problems. While the practice of co-locating work and remediation sites seemed ideal in that it reduced the need for transportation, when participants were bused from remediation to work (or vice versa) it seemed to have worked nearly as well. In most respects, STEP work experience jobs were very much like regular SYEP jobs.

Participants reacted positively to their summer jobs -- work experience was the most important of all program components, even when earnings were discounted.

LIFE PLANNING

Because of the critical need for young people to understand the relationship of choices regarding sexual behavior and longer term prospects for education and career, life planning was included in the STEP treatment. The following sections describe the development of the life planning curriculum, elaborate upon its content and methods of instruction, and present participants' assessment of the life planning component.

Curriculum Development

As described earlier in this chapter, the pilot sites took primary responsibility for developing the remediation component and arranging for work sites. By contrast, P/PV took the more active role in developing the life planning component. Together with consultants from the Center for Population Options, P/PV developed the 18-hour curriculum and trained local STEP staff to deliver it. Because P/PV developed the curriculum, treatment youth in Boston and Pinellas County received a standardized program of instruction. In Baltimore, however, staff from the local Planned Parenthood organization collaborated with P/PV's curriculum development consultants to adapt the lesson plans.

The Curriculum

The life planning curriculum was structured as a series of twelve one-and one-half-hour modules. In Boston and Pinellas County, the modules were delivered twice a week throughout the summer, a total of 18 hours. In Baltimore, the modules were grouped into two full-day workshops, totalling about 12 hours.

Each site delivered the curriculum in a different manner. In Boston, three special trainers delivered the curriculum at the seven remediation sites. In Pinellas County, the classroom instructors responsible for remediation also delivered the life planning curriculum. In Baltimore, specialists in life planning from the local Planned Parenthood agency and P/PV consultants from the Center for Population Options delivered the instruction.

The fact that the pilot sites were able to exercise such discretion in the manner of delivering the curriculum attests to the adaptability and strength of its materials, which are described below. The topics explored are:

- Personal and family values, and the way they affect behavior.
- Stereotypes, and how they limit behavior in the workplace and in the family.
- The clarification of life goals, and how they can be affected by early parenthood.
- Techniques to use in making good decisions, and ways of overcoming pressure to change them.
- The costs and responsibilities of having a child.
- The special problems of being a teenage parent.
- Ways of preventing an unwanted pregnancy: abstaining from sexual activity and using an effective method of contraception, if sexually active.
- Ways of locating referral sources for birth control information and treatment for sexually transmitted diseases.

The life planning component had also included an optional field trip to a local health clinic, the purpose of which was to acquaint youth with a clinic setting where they could receive comprehensive health care and family planning services. Due to concerns about parental objections, however, this option was not offered at any of the pilot sites.

The life planning curriculum was taught in a manner that actively involved the youth. Once a topic was introduced by the teacher, there was class discussion and activity designed to reinforce the lesson. Some examples of this type of activity included role playing, writing a job description that lists the qualities necessary in a good parent, and developing responses to "lines" that a member of the opposite sex might use to encourage sexual activity. The program also included five films that reinforced these topics.

Overall, the trainers faithfully implemented the P/PV curriculum. However, staff in both Pinellas County and Boston reported that time was occasionally too short to complete a module; more time was needed for discussion.

Response to the Curriculum

The teachers, curriculum developers and other professional observers felt that most activities were well designed for the STEP target population. However, two consistent criticisms were that the curriculum did not reflect the perspectives of males, and that many of the films were dated and did not reflect the racial or socioeconomic characteristics of participants.

Classroom observers reported that students were very interested in the material, especially topics related to human sexuality and contraception. They asked questions and participated actively in most class sessions. Students' responses to life planning questions at follow-up generally corroborate these observations.

Ninety-five percent of participants said they learned something new from the life planning course. As shown in Table III-7, 71 percent of Baltimore youth thought they learned a lot, compared to 67 percent in Pinellas County and 50 percent in Boston. In Pinellas County, female students

TABLE III-7

TREATMENT STUDENT ASSESSMENTS OF THE LIFE PLANNING COMPONENT

Life Planning Component Characteristics	Percentage Distributions by Site		
	Boston	Pinellas	Baltimore
Students Reporting Learning a Lot of New Information	50%	67%	71%
Students Reporting Learning a Little New Information	43%	28%	29%
Students Reporting Learning No New Information	7%	5%	0
Students Who Liked The Following Life Planning Segments:			
- Movies	45%	55%	50%
- Birth Control	48%	52%	50%
- Plans for the Future	58%	56%	76%
- Sexual Problems	43%	51%	61%
- Parenthood	47%	46%	45%
Students Who Would Delete The Following Life Planning Segments:			
- Movies	29%	34%	35%
- Birth Control	13%	16%	8%
- Plans for the Future	17%	23%	12%
- Sexual Problems	18%	18%	12%
- Parenthood	17%	21%	26%
Total in Sample	413	207	68

were more enthusiastic than males. Eighty-three percent of the girls said they learned a lot, as compared with 55 percent of the boys. There were no differences between male and female responses in Boston in Baltimore.

Two key points should be kept in mind when considering these responses. First, students' perceptions should be compared with the gains in knowledge that are reported in Chapter V. Second, Baltimore youth did not receive the same life planning component as youth in Boston and Pinellas County: in Baltimore, the teachers were all life planning professionals, the topics covered were somewhat different, and the curriculum was delivered in two full-day workshops at the end of the summer program. Thus, their experience was more recent and more intense than that of youth in either Boston or Pinellas County.

All participants were asked what part of the life planning classes they liked and what portions they would delete if the program could have been changed. Student responses were remarkably consistent at each of the three pilot sites. The most popular element was the series of exercises designed to help students plan for the future. More youths chose this part of the curriculum as one of their favorite program elements than any of the other choices. students were asked to think of what they would like their lives to be at age 18 and at age 25, and to consider the kinds of goals and decisions that were necessary to realize those dreams. Both males and females in Boston and Baltimore liked this element of the program more than any of other choices. Female students in Pinellas County rated "discussing parenthood" at the same high level. Males in Pinellas County were an exception: more of them liked the movies and learning about birth control.

This positive response to planning for the future is somewhat surprising, since site and P/PV observers reported that participants were somewhat impatient with general life planning topics and more anxious to focus on the birth control and sexuality topics that were presented later.

One other topic, "learning about the different types of birth control," was also very well received. It was the last element that the youths would want to see dropped from the curriculum. This response was shared by youth at all three sites, and was consistent for both boys and girls in the program. Approximately one-third of participants thought the movies could be dropped, but about half the students liked them.

When youths were asked what they thought was the most important aspect of their summer experience, two choices relative to the life planning course were offered: "I learned more about having a family" and "I learned more about making decisions." The life planning component -- as captured in these two choices -- accounted for the most important aspect of the summer program for 31 percent of the Boston youth, 29 percent in Pinellas County and 19 percent in Baltimore (see Table III-4).

Reprise: Life Planning

By all accounts, the life planning component was implemented with a high degree of success at all three sites. Although each undertook a somewhat different approach, the sites were each able to deliver a component that participants valued highly. Moreover, enthusiasm for this component was high among life planning instructors -- whether they were the same teachers who were responsible for remediation (Pinellas County) or special life planning instructors (Boston).

From a program implementation perspective, then, the pilot of the life planning component was very encouraging. Chapter V will discuss the impact of the life planning curriculum on participants' attitudes and behaviors, and will suggest areas in which the curriculum can be strengthened.

OVERVIEW OF PROGRAM IMPLEMENTATION

Of the program implementation conclusions to be drawn from the pilot, one of the most important concerns the versatility of the STEP program model. Even when sites took distinctively different approaches to the design and implementation of many of its key features, they were nonetheless able to pull off a reasonably well-run program.

One cause for concern lies in participants' responses to the program as a whole. The majority of treatment youths said they would recommend the program to a friend; 90 percent in Boston, 88 percent in Pinellas County and 79 percent in Baltimore. They expressed sharply different opinions, however, regarding whether they would themselves want to participate in the program again next year. Pinellas County youths were most enthusiastic -- 65 percent saying they would attend again. However, only 43 percent of Boston youth and 29 percent of Baltimore youth would attend again. Many youths were not sure -- 48 percent in Boston, 30 percent in Pinellas and 61 percent in Baltimore. Only a very small number of youths said they definitely would not participate again.

It seems important to increase the number of participants who are definitely willing to return for the second summer. Program impact will undoubtedly be diminished if larger numbers of participants receive half or less of the full treatment.

Chapter IV

A PROFILE OF STEP PARTICIPANTS

This chapter outlines the age, economic and educational characteristics at baseline of students enrolled in each of the sites and presents demographic, behavioral and attitudinal characteristics relevant to program concerns. Differences across sites with respect to these characteristics are highlighted.

Data were obtained from JTPA applications, pre-tests on the Metropolitan Achievement Test (MAT) and baseline questionnaires. The sample on which the data are based is the 687 youths in Boston and Pinellas County for whom random assignment into a treatment or control group was completed, for whom application and baseline questionnaire data are available, and who had at least one paid program hour during the summer. In Boston, there were 449 such students -- 220 treatments and 229 controls. In Pinellas County there were 238 -- 143 treatments and 95 controls. In Baltimore a total of 73 treatment youths participated and, with the exception of undergoing random assignment, met these same criteria. This brings to 760 the number of youth in the baseline sample.

ELIGIBILITY REQUIREMENTS AND CHARACTERISTICS

To recapitulate, eligibility criteria required participants to be between the ages of 14 and 15, economically disadvantaged and educationally deficient. JTPA guidelines for determining economic status were used for screening and selection. In general, these guidelines require Summer Youth Employment Program applicants to provide proof of household income and composition.

Educational deficiency was determined by reading and/or math scores on standardized tests and/or by screening for students who had repeated at least one grade. As discussed in Chapter III, operational definitions varied among the sites. In Boston, students were selected who had low scores on standardized tests and had been held back. In Pinellas County, students who appeared to be behind in grade based on their ages, or who reported being held back, were selected. In Baltimore, students who tested one to three grades behind in reading, math or language arts, or who received low or failing marks in these subjects, were selected.

Table IV-1 presents participant characteristics by eligibilty criteria. When reviewing these data, one should note that although all sites enrolled students who met the eligibility criteria and, (in the case of Boston and Pinellas County) randomly assigned youths to treatment and control groups, there are sufficient differences with respect to basic site and enrollee characteristics to warrant separate treatment.

One of the major differences across sites is the size of the population served in each. As previously indicated, the Boston site was almost twice as large as the site in Pinellas County, which served more than three times the number of students served in Baltimore. Finally, sites differ in the distribution of age, race, sex and ability levels among the students served.

In spite of some differential drop-out immediately after random assignment and administration of the pre-test, there were few significant differences between treatments and controls in the baseline sample with respect to eligibility criteria.

Age. There was a similar age distribution among treatments and controls for both Boston and Pinellas County; where both 14 and 15-year olds were served. In Baltimore, only 14-year-olds participated.

TABLE IV-1

DISTRIBUTION OF STEP TREATMENT AND CONTROL STUDENTS BY PROGRAM ELIGIBILITY CRITERIA

	Percentage or Mean Distributions of Students by Eligibility Criteria						
	Boston		Pinellas County		Baltimore	All Sites	
Eligibility Criteria	Treatment	Control	Treatment	Control	Treatment	Treatment	Control
Age							
< 14 years old	0	0	1%	0	1%	1%	0
14 years old	50%	45%	57%	55%	99%	57%	55%
15 years old	50%	55%	41%	44%	0	41%	44%
> 15 years old	0	0	1%	1%	0	1%	1%
Economic Characteristics							
Percent Receiving Public Assistance	74%	66%	69%	54%	25%	64%	63%
Educational Characteristics							
Mean MAT Reading Score	726	730	681	695	728	712	719
Mean MAT Math Score	703	702	691	693	741	705	699
Mean MAT Language Score	n/a	n/a	n/a	n/a	717	717	n/a
Percent repeating At Least One grade	50%	52%	89%	88%	44%	62%	63%
TOTAL IN SAMPLE	220	229	143	95	73	436	324

n/a = not applicable

*Treatment/Control difference is significant at the .10 level
**Treatment/Control difference is significant at the .05 level.

Economic Status. Based on reported family income and/or participation in public assistance programs, students in all sites appear to have qualified for participation in STEP on the economic criteria. In Boston, 74 percent of treatment students and 66 percent of the controls reported participating in at least one public assistance program. In Pinellas County, a larger difference between treatment and controls was observed: 69 percent of the treatment group reported participating in public assistance programs of some kind compared to 54 percent of controls. Treatment and control differences with respect to public assistance receipt were significant in both Boston ($p < .10$) and Pinellas County ($p < .05$). With only 25 percent of Baltimore's students reporting public assistance receipt, students at this site seemed less disadvantaged than at the other sites.

The second indicator of economic status is six-month family income, as reported on JTPA applications of treatment and control group youths. Although income is a JTPA eligibility requirement and must be verified before a youth can participate in the Summer Youth Employment Program, these data were nevertheless extremely problematic, and ultimately unusable, for the purposes of analysis.

Data on income were simply not available for large numbers of sample youths. In Boston, data on income were missing for 31 percent of the sample. In Pinellas County and Baltimore, they were unavailable for 4 percent and 18 percent, respectively, of the samples. In addition, many applications reported zero income. It seems likely that in such cases, intake/eligibility staff accepted evidence of public assistance receipt as proof of JTPA eligibility, and entered zero (earned) income on the application. Whatever the situation, the result is that data on income are not believable.

Educational Status. Metropolitan Achievement Test (MAT) scores at pretest and data on grade repetition indicate that students indeed met the educational eligibility criteria, and that the randomization of treatments and controls was successful. Differences between treatments and controls in Boston and Pinellas County were not significant. Treatment youths in Boston had a mean scaled score of 726 in reading compared to a mean score of 730 for the control group. In math, the scores were even closer, with treatments showing a mean of 703 and controls a mean of 702. In Pinellas County, the mean reading score for the treatment group was 681 and 695 for controls. In math, treatment youths had a mean score of 691 and control group youths a mean score of 693. Students in Baltimore had a mean score of 728 in reading and 741 in math.

As the scores indicate, students in Boston and Baltimore scored higher in both reading and math than students in Pinellas County. Comparisons to national norms indicate that students in Boston and Baltimore read at the 6.2 grade level at baseline, while students in Pinellas County tested at only the 4.5 grade level. Mathematics scores for Boston indicate that students were at the 7.0 grade level, Baltimore's at the 8.7 grade level and Pinellas County students tested at the 6.4 grade level. Although students in all sites tested below grade level, Baltimore participants, all of whom were 14-year-olds, scored closer to what might be expected for their age and grade.

Consistent with the variation in educational deficiency criteria, differences across sites with respect to the percentage of students who repeated at least one grade were especially striking. In Boston, 51 percent of the students in the sample had repeated at least one grade. In Baltimore, only 44 percent had repeated a grade. In contrast, 89 percent of the students in Pinellas County had repeated at least one grade. However, within sites no significant differences were observed between treatments and controls on this variable.

OTHER DEMOGRAPHIC CHARACTERISTICS

Table IV-2 presents the data on demographic characteristics discussed in this section.

Sex. Across sites, an approximately equivalent number of males and females participated in the STEP pilot. Both Boston and Baltimore served more females than males. In Boston, 53 percent of the enrollment was female; in Baltimore, 52 percent; and in Pinellas County, 42 percent.

Race. One of the largest sources of variation across the sites was race. In Pinellas County and Baltimore, the large majority of youths were black (89 percent and 94 percent, respectively). In Boston, although the majority of youths were black (53 percent), more racial diversity was evident. Nineteen percent of Boston youths were white; 23 percent Hispanic; and 5 percent categorized as other.

Household Size. Virtually no differences were observed across sites with respect to household size. Family size ranged from 4.6 in Boston to 5.0 in Pinellas County.

Single-Parent Households. In both Boston and Pinellas County a majority of students came from families with only one parent present. Overall, 67 percent of Boston's students came from single parent homes as did 73 percent of the students in Pinellas County. This information was not available for Baltimore.

Female-Headed Households. As might be expected from the above discussion, many STEP students came from families headed by women. In Boston, 68 percent of the treatments and 65 percent of the controls came from female-headed households (67 percent overall). Seventy-three percent of the treatment youth and 71 percent of the controls in Pinellas County also came from families headed by women (72 percent overall). Again, this

TABLE IV-2

DEMOGRAPHIC CHARACTERISTICS OF STEP PARTICIPANTS AT BASELINE

Demographic Characteristics	Percentage or Mean Distribution of Students			
	Boston	Pinellas	Baltimore	All Sites
Sex				
- Male	47%	58%	48%	50%
- Female	53%	42%	52%	50%
Race				
- Black	53%	89%	94%	68%
- White	19%	10%	4%	15%
- Hispanic	23%	1%	1%	14%
- Other	5%	1%	*	3%
Household Size	4.6	5.0	4.8	4.8
Single-Parent Households	67%	73%	na	69%
Female-Headed Households	67%	72%	na	68%
AFDC	63%**	na	29%	59%
TOTAL IN SAMPLE	449	238	73	760

na = not available

* Race data are missing for six students enrolled in Baltimore

** Sixty-nine percent of treatment youth in Boston and 58 percent of the control youth reported AFDC participation. This difference is significant at the .05 level.

information was not available for Baltimore.

AFDC. Sixty-nine percent of Boston's treatment youth, compared to only 58 percent of the controls, reported participation in the Aid to Families with Dependent Children Program. This treatment versus control difference is significant at the .05 level. Conversely, only 29 percent of Baltimore's enrollment reported AFDC participation. These data are not available for the Pinellas County site. It should be noted that AFDC receipt is only one component of the variable called "public assistance receipt." Public assistance is comprised of any or all of the following programs: AFDC, General Relief, Refugee Assistance, Food Stamps, WIN/ET, and Unemployment Insurance. In Boston and Baltimore it was possible to separate AFDC from the other programs. In Pinellas County, sources were not specified and, therefore, data on AFDC participation was unavailable.

OTHER BASELINE CHARACTERISTICS

Additional Educational Characteristics

The level of grade completion also represents an area of variation and additional justification for the separate treatment of site data. Students in Baltimore were most advanced. As shown in Table IV-3, 75 percent of Baltimore's students had completed the eighth grade compared to only 43 percent and 39 percent in Boston and Pinellas County respectively. This higher level of advancement in Baltimore was true in spite of the fact that, unlike the other two sites, Baltimore did not enroll any students over 14 years of age.

Across the sites, Pinellas County had the highest percentage of students who tested at least two grades below grade. Sixty percent of the students in Pinellas County fell into this category, compared with 47 percent in both Boston and Baltimore.

TABLE IV-3

ADDITIONAL EDUCATIONAL CHARACTERISTICS OF STEP PARTICIPANTS AT BASELINE

Baseline Educational Characteristics	Percentage or Mean Distribution of Step Participants by Site			
	Boston	Pinellas	Baltimore	All Sites
Highest grade completed				
- 6th grade or less	5%	9%	0	6%
- 7th grade	21%	47%	12%	28%
- 8th grade	43%	39%	75%	45%
- 9th grade and above	3%	5%	12%	21%
Testing behind at least two grade levels	47%	60%	47%	51%
Ever Suspended	44%	54%	75%	50%
Mean number of days absent	16	10	13	14
Want high school diploma	99%	99%	99%	99%
Expect high school diploma	96%	96%	99%	96%
TOTAL IN SAMPLE	449	238	73	760

One indicator of the school behavior of the STEP sample is the number who said they had been suspended for any reason. Wide variation across the three sites is evident on this variable. In Boston only 44 percent of students reported any suspensions, compared to 54 percent in Pinellas County. In Baltimore, 75 percent of students reported suspensions.

Another indication of potential dropout behavior is the number of days absent from school in the preceding year. These data were self-reported, and should be viewed with caution. The mean number of days absent in the three sites were 16, 10 and 13 for Boston, Pinellas County and Baltimore, respectively. The range of answers in Boston were from one to 100, in Pinellas County from zero to 105, and in Baltimore one to 36.

Finally, the educational aspirations of students showed considerable homogeneity; 99 percent of youths in all sites said they wanted a high school diploma. When asked if they expected to receive a diploma, a smaller percentage (96 percent) answered in the affirmative.

Employment Characteristics

Non-significant differences between treatment and control group students were observed with respect to employment background. In Pinellas County, 61 percent of the students had previously held paid jobs outside of the home. In Boston, 57 percent indicated previous work experience. Sixty-two percent of Baltimore's students reported having previous work experience.

Homogeneity of enrollees in the STEP pilot is also evident in the area of career-related perceptions. At baseline, 73 percent of the students in Boston and Baltimore believed that men and women earn equal pay for equal work. This is consistent with the response from Pinellas County participants, 75 percent of whom believed that men and women are paid equally for equal work.

TABLE IV-4

EMPLOYMENT CHARACTERISTICS OF STEP PARTICIPANTS AT BASELINE

Employment/Career Related Characteristics	Percentage Distribution of Participants			
	Boston	Pinellas	Baltimore	All Sites
Percent with prior work experience	57%	61%	62%	59%
Career Perceptions				
- Percent believing men and women earn equal pay	73%	75%	73%	74%
- Percent believing it appropriate for women to hold traditionally male jobs	84%	81%	89%	83%
- Percent believing it appropriate for men to hold traditionally female jobs	68%	63%	74%	67%
TOTAL IN SAMPLE	449	238	73	760

Many students in all three sites believed in the appropriateness of women holding traditionally male jobs and vice versa. However, students were more liberal in terms of women holding male jobs than they were with men having traditionally female jobs. Eighty-four percent of the students in Boston thought it appropriate for women to hold traditionally male jobs and 68 percent thought that males could hold jobs traditionally filled by females. Similarly, in Pinellas and Baltimore, 81 percent and 89 percent respectively thought it appropriate for a woman to have a traditionally male job. Sixty-three percent of the students in Pinellas and 74 percent in Baltimore felt that it was appropriate for men to hold traditionally female positions.

Fertility-Related Attitudes and Behaviors

At baseline, sample youths were asked two questions which together provide an index of birth control knowledge. These questions determine whether a student knows the circumstances under which conception is possible, and the types of birth control available without a prescription.

At baseline, sample youths had only a limited grasp of birth control knowledge. In Boston, only 28 percent of the sample could correctly answer both questions, while 26 percent was unable to answer either. Students in Pinellas County fared similarly in that 23 percent answered both items correctly and 31 percent was unable to answer either. Baltimore had the lowest percentage, 21 percent, of students unable to answer either question; 28 percent correctly answered both. No significant differences between treatments and controls were observed. However, girls were more likely to know the answers to both questions than were boys (31 percent versus 21 percent). These data appear in Table IV-5.

TABLE IV-5

FERTILITY-RELATED CHARACTERISTICS OF STEP PARTICIPANTS AT BASELINE

Fertility-Related Characteristics	Percentage Distribution of Step Participants, By Site and Group						
	Boston		Pinellas		Baltimore	All Sites	
	Treatment	Control	Treatment	Control	Treatment	Treatment	Control
Birth control knowledge							
- percent answering both questions correctly	29%	28%	21%	23%	28%	26%	26%
- percent answering one question correctly	45%	46%	49%	41%	51%	47%	45%
- percent answering neither question correctly	26%	26%	30%	36%	21%	27%	29%
Percent sexually active[a]	42%	43%	66%	63%	78%	53%	47%
Percent of sexually active youth using contraception[a]	58%	51%	71%	43%	53%	58%	42%
Consequences and cost of parenting							
- percent answering both questions correctly	17%	22%	13%	14%	27%	17%	20%
- percent answering one question correctly	54%	50%	38%	43%	52%	48%	48%
- percent answering neither question correctly	30%	27%	49%	43%	21%	35%	32%
TOTAL IN SAMPLE	218	227	143	95	73	434	322

[a] Note that these questions were asked at follow-up, and may have been influenced by program participation. In addition, there was a very high non-response rate for these questions. Refer to the text for a more detailed discussion of these data problems.

A second measure of fertility-related issues is knowledge of the consequences of adolescent pregnancy -- a two-item variable asking participants the cost of raising a child to age 18 and the likelihood that a girl experiencing a teenage pregnancy will finish high school. Like data on birth control knowledge, these data are also presented Table IV.5. In Boston, only 19 percent of those enrolled (17 percent treatments; 22 percent controls) could answer both questions correctly; 13 percent of the Pinellas County sample could correctly answer both questions; in Baltimore, 27 percent could do so.

For a number of reasons, including concerns about both necessity and sensitivity, questions about sexual behavior -- both sexual experience and contraceptive utilization -- were handled in a way that proved problematic for subsequent analysis. Unlike other questions referred to in this chapter, these questions were not asked at baseline. Instead, at follow-up, respondents were asked to provide retrospective data regarding their status at baseline and to provide data regarding their sexual behavior since the beginning of the summer.

This procedure was problematic. First, because neither treatments nor controls had been informed in advance that questions regarding sexual behavior would be asked at follow-up, these questions came as a surprise. These questions may have appeared unseemly to controls since they had not participated in the life planning classes at which these issues were discussed. As a result, the non-response rate for these questions was quite high. Controls were significantly more likely to refuse to answer than were treatments.

Another problem associated with these data is that sample members -- both participants and controls -- were asked, after they had participated in the program, what their pre-program sexual activity had been. It is highly likely that participation influenced answers about baseline status. For instance, one might hypothesize that the treatment group -- having participated in a program that counsels delaying initiation of sexual activity and the exercise of responsible birth control for those who are active -- might be less likely than the control group to report that they were experienced. There were, in fact, treatment/control differences in stated sexual activity, but the direction was counter to this hypothesis. Treatment youths were more likely than control group youths (57 percent versus 48 percent) to say that, at baseline, they were sexually experienced.

Whatever the direction of the difference, the important fact to note is that there were significant treatment/control group differences at "baseline" in a randomly assigned sample whose baseline profile is virtually free of such differences. There is indeed justification for suspecting that these measures reflect program impacts. Clearly, these data must be viewed with extreme caution, and any generalization from them should be limited. These data are presented as an important indication, no matter how flawed, of the fertility-related behaviors of a subset of the pilot population. However, further analyses of these data will be limited.

With these caveats, this chapter now turns to an examination of these data. Across all sites, 53 percent of the 617 participants responding to the question said that they had had a sexual experience prior to the beginning of the summer. This varied widely by site, with 78 percent of the Baltimore sample, 64 percent of the Pinellas County sample and 43 percent of the Boston sample reporting that they had been sexually active prior to the beginning of the summer. There were also significant differences by sex, race and age. Of the 327 participants saying that they were sexually experienced at the beginning of the summer, 279 answered questions about use of birth control. Fifty-eight percent (161) reported having used some form of birth control, and the remainder reported that they had not.

On the whole, these data point to a sample of 14- and 15-year-olds among whom a large number report that they are sexually experienced but not using and largely ignorant of the basic data of contraception. Taken together, these data suggest that the STEP population is greatly in need of an intervention like the life planning component of STEP.

This completes the baseline profile of the STEP sample. Chapter V examines program impacts on academic performance and life planning attitudes.

CHAPTER V

PROGRAM IMPACTS

As a demonstration that focuses on high school graduation rates and early labor force participation, STEP has both long-term and short-term objectives. As a long-term proposition, STEP seeks to reduce the high school dropout rate among disadvantaged young people who have records of poor academic performance and who are at-risk for adolescent parenthood. It seeks to do so by first attaining several short-term objectives: improving participants' basic skills and increasing their motivation and ability to avoid adolescent pregnancy.

This chapter presents an analysis of the impact of program participation on these short-term objectives -- learning gains and life planning outcomes. First, however, the stage is set for these discussions by a presentation of basic analytic strategies and a report on hours and program completion -- e.g., the average number of hours of treatment that participants received, and the incoming characteristics of participants that predict program completion.

The discussion of program hours serves as a prelude to an examination of alternative measures of program participation -- measures that rely not only on treatment or control group status, but also take into account how much treatment an individual participant has received.

BASIC ANALYTIC STRATEGIES

The measurement of the impact of participation in STEP will rely heavily upon multivariate analysis -- in most cases, a straightforward ordinary least squares multiple regression -- to statistically adjust treatment effects for measured differences between treatments and controls on important baseline and demographic characteristics. Moreover, by incorporating more information into the estimation process, multivariate analysis takes advantage of interrelationships among variables and so produces greater precision.

One of the advantages of multivariate analysis is that it permits an examination of the impact of the treatment while holding constant the effects of all other variables specified in the model. It is thus possible to determine effects that are not apparent from a simple examination of means or percentages at follow-up. Multivariate analysis can be an asset even in a design that includes random assignment, since differential attrition from the program can undo the effects of the initial assignment. Moreover, random assignment does not guarantee that there will not be significant differences between treatments and controls. Though it has the effect of reducing the likelihood that such differences will exist, often a small number of significant differences will occur in spite of random assignment.

Throughout this chapter, the following procedure will be followed: for each dependent variable, descriptive information -- including treatment and control differences at follow-up -- will be provided without statistical adjustments. Then the results of the multivariate analysis, which permits adjustments for important baseline and background characteristics and provides a more precise assessment of program impact, will be discussed. Where more sophisticated analytic techniques are necessary, the results are presented in the text and the more detailed explication of the model is presented in the technical appendix.

Since Baltimore had no control group, most of this chapter is concerned with outcomes for Boston and Pinellas County.

MODELING PROGRAM PARTICIPATION

Understanding program participation -- e.g., knowing what characteristics predict whether a youth will remain in the program or drop out after a relatively short time -- is important from a number of perspectives. First, in order for STEP to have a beneficial effect, participants must receive the treatment. Secondly, what is learned from the participation analysis can be used to fine-tune the program design in order to increase the number of youths who complete the program.

Table V-1 presents data on program participation for the total sample. As it shows, between 5 and 19 percent of the sample dropped out of the program before any significant participation -- they applied, were randomly assigned, but had no paid program hours. These youths are considered no-shows and are excluded from further analysis. Of those who did participate in the program, 81 percent in Boston (80 percent of treatments and 82 percent of controls) and 57 percent in Pinellas County (64 percent of treatments and 48 percent of controls) completed the program, when program completion was operationally defined as having completed at least 75 percent of the total available program hours, given that some of those program hours took place in the final pay period.

There were 200 available program hours in Boston and 240 in Pinellas County. Treatment youths in Boston averaged 176 total program hours, while control group youths averaged 185 hours. In Pinellas County, treatment and control group youths averaged 202 and 208 hours respectively.[1]

---

[1] These data to some extent misrepresent total program hours since, particularly in Pinellas County, data on program hours for several pay periods were missing for a number of participants.

TABLE V-1

PERCENTAGE DISTRIBUTION OF PROGRAM PARTICIPATION BY SITE

Site	Youths With No Paid Hours	Youths With Paid Hours Who Participated:	
		Less Than 75% Of Total Hours	75% Or More Of Total Hours
Boston			
Treatments n = 239	8%	20%	80%
Controls n = 269	5%	18%	82%
Pinellas County			
Treatments n = 168	9%	36%	64%
Controls n = 151	19%	52%	48%
Baltimore			
n = 73	-	27%	73%

In order to better understand the nature of program participation, an examination of the characteristics of completers and non-completers was undertaken. From this examination, a differential pattern of attrition began to emerge. As Chart V-1 shows, very few variables seemed associated with program completion for the control group.

By contrast, a number of educational variables were significantly related to program completion for treatment youths. In Boston, program completion was significantly related to baseline scores in reading and math, as well as a positive school record as measured by fewer absences and a lack of disciplinary actions (suspensions). In Pinellas County, the pattern was similar -- better academic and school behavior seemed to predict program completion. There, the key variables were baseline scores in reading, school attendance, grade advancement, and an absence of disciplinary problems.

Thus it appears that within a target group of youths with serious educational deficiencies, it is those youths with the very worst records of behavior and academic performance who are the least likely to complete the program. The better-performing participants within the range were most likely to complete the program.

In order to determine more precisely the effects of these characteristics on program participation, a multivariate analysis of program hours was performed utilizing the records of those participants who had complete data sets. In this analysis age, race, sex, grade, family size, public assistance receipt, membership in a female-headed household, baseline scores on reading and math and a number of variables related to school attendance and behavior were included in the equation. In addition, a number of terms that reflect the interaction between the academic variables and treatment and control group status

CHART V-1

VARIABLES THAT DIFFERENTIATE THE COMPLETERS AND NON-COMPLETERS,[a] BY SITE

Variable	Boston		Pinellas County		Baltimore
	Treatment	Control	Treatment	Control	Treatment
Percent Male		+	+		
Percent Black					
Percent Receiving Public Assistance				+	
Percent Ever Repeating a Grade	-				
Percent Ever Expelled	-				
Percent Ever Suspended	-		-		
School Absences			-		
Pretest Math Score			+		
Pretest Reading Score	+		+		+

[a] In this chart a + indicates that the measure for completers was higher than the measure for non-completers; a - indicates that the measure for non-completers was higher than completers on the indicated variable.

were included in the equation in order to determine if the relationship between the academic variables and program hours implied by the simple comparisions varied for STEP participants and control group members.

It proved impossible to estimate a model for program participation in Pinellas; all of its parameters could not be shown to be simultaneously different from zero. These results appear in the Appendix. The results of the regression for Boston appear in Table V-2. As it shows, the model was only capable of explaining 10 percent of the variation in program hours. Of the variables in the equation, sex, the number of absences from school, and the interaction between baseline reading scores and treatment significantly predicted length of stay in the program.

Accordingly, youths with frequent absences from school drop out of STEP earlier than those with fewer absences. In addition, girls remained in the program significantly longer than boys. Moreover, the interaction between baseline reading scores and treatment status was significant. Among treatment youths, higher baseline reading scores predicted a longer program stay. For control group youths, however, there was no such relationship.

Since sample sizes are small, particularly for Pinellas County, an attempt was made to estimate hours of program participation by pooling data for Boston and Pinellas. These results, which parallel the Boston findings, appear in the Appendix.

LEARNING GAINS

In this section the impact of STEP on academic performance is examined. Increased academic performance is posited as the first in a series of steps that could lead, eventually, to a reduction in the high school dropout rate of members of STEP's target population. It is hypothesized that participants who over the

TABLE V-2

DETERMINANTS OF HOURS OF PROGRAM PARTICIPATION IN BOSTON

Explanatory Variable	Coefficient	T-Ratio
Constant	198.57	5.19**
Sex (Male = 1)	- 6.90	-1.83*
Race (Black = 1)	- 0.26	-0.05
Race (Hispanic = 1)	- 3.04	-0.54
Age	- 1.34	-0.29
Public Assistance Receipt	4.29	0.94
Family Size	0.59	0.48
Female-Headed Household	1.81	0.42
School Absences	- 0.31	-2.88**
Suspensions	- 0.81	-0.20
Grade	1.13	0.37
Repeated a Grade	6.26	1.05
Baseline Reading	- 0.07	-1.49
Baseline Math	0.04	1.15
Treatment	-108.49	-2.25**
Treatment x Repeated a Grade	- 12.29	-1.59
Treatment x Absences	0.07	0.43
Treatment x Baseline Math	0.01	0.21
Treatment x Baseline Reading	0.12	1.74*

R-Squared = 0.1037

Adjusted R-Squared = 0.0558

F-Test of Overall Significance = 2.17**
With 18,337 Degrees of Freedom

Sample Size = 335

*Significant at the .10 Level
**Significant at or beyond the .05 Level

summer receive 90 hours of remediation utilizing an individualized competency-based curriculum will experience significant academic successes, perhaps for the first time. These successes would in turn trigger an increase in educational aspirations and an increase in the likelihood that participants will return to school in the fall. Once there, the academic successes of the summer will generalize to the regular school year, particularly if the students' summer achievements are reinforced by STEP's school year social support component. Because of these experiences, participants will be more likely to remain in school longer than they might otherwise and continue until graduation.

Table V-3 presents the data that permit an examination of whether STEP was successful in helping its participants reach the first of these steps. It presents pre-test and post-test scores in reading and math on the Metropolitan Achievement Test (MAT) for treatment and control group youths in Boston and Pinellas County. For comparison purposes, pre-test and post-test scores are also presented for Baltimore, even though there was no control group at this site. The numbers that appear in this table are scaled scores, which are converted from the number of correct answers to a metric more compatible with statistical analysis. Data are presented for only those youths for whom both pre-test and post-test data were available.

In Boston, where treatment and control group youth were matched on MAT scores from the previous fall, baseline scores in both reading and math were virtually identical. At the end of the summer, however, their paths had begun to diverge. The control group experienced significant losses in both reading and math, while treatment youths experienced gains in both subjects, significant in math but not in reading.

In Pinellas, the pattern that emerged was somewhat more complicated. There the control group losses were not

TABLE V-3

MAT SCORES IN READING AND MATH BY SITE

Site	Reading Scores			Math Scores		
	Pre-Test	Post-Test	Change	Pre-Test	Post-Test	Change
Boston						
Treatments n = 197	730	737	+ 7	710	733	+23**
Controls n = 208	730	708	-22**	702	685	-17**
Pinellas						
Treatments n = 126	681	691	+10	693	700	+ 6
Controls n = 83	698	693	- 5	697	681	-16
Baltimore						
Treatments Only n = 72	728	724	- 4	741	757	+16*

*Significant at the .10 level
**Significant at or beyond the .05 level

significant, although they were sizable in math. The treatment group experienced gains in both reading and math, but they were not significant. Thus, in Boston there was documentation of summer learning losses for disadvantaged young people who receive work experience alone. By contrast, there was a significant gains in math for treatment youths in this site.

When data for Baltimore are examined, a mixed pattern emerges. While participants experienced a significant gain in reading, they experienced a non-significant loss in math.

A multiple regression model was employed to make a more definitive determination of the impact of the program on reading and math scores at post-test, net of the influence of other characteristics of the sample. These scores were examined as a function of baseline scores in reading and math, a vector of school behavior variables that include absences, being held back, the presence of disciplinary actions (suspensions or expulsions), demographic characteristics and treatment or control group status. The results of the analysis, as they refer to treatment and control group differences, appear in Table V-4. As it shows, there were significant impacts of participation in STEP for both Boston and Pinellas County for both reading and math, though the magnitude of the impact was greater in Boston. At follow-up, STEP participants in Boston have a 31 point advantage in reading and a 43 point advantage in math over their control group counterparts. In Pinellas, treatment youths have 17 and 16 point advantages in reading and math respectively. It should be noted, however, that both the treatment gains and the control group losses contribute to the computation of these net impacts. Thus, to the extent that control group losses reflect their lower motivation to perform well on the post-test, these figures may overstate STEP's true impact on learning.

Scaled scores are abstract numbers useful primarily for statistical analysis. In order to interpret gains of the

TABLE V-4

IMPACT OF PARTICIPATION IN STEP ON MAT SCALED SCORES IN READING AND MATH, BY SITE

Sites	Regression Parameters	
	Coefficient	T-Ratio
Boston		
Reading	30.70	6.36**
Math	42.90	6.83**
Pinellas		
Reading	16.72	2.01*
Math	16.30	2.22*

*Significant at the .05 Level

**Significant at the .01 Level

magnitude of the sizes achieved by STEP participants, scaled scores were converted to grade equivalents. When the net impact of treatment gains and control group losses were taken into account in the computation, the results seemed impressive. In Pinellas County, participants at pre-test on average scored 690 on reading. This corresponds to a grade equivalent of 4.5 --4th grade and 5th month. The 17 point advantage of treatments over controls would increase the reading score of a student scoring 690 at baseline by .8 of a grade, or 8 months. Thus, participants in Pinellas County gained a little less than a grade in reading as a result of participation in STEP. Following the same procedure makes it clear that participants in all sites made substantial gains -- in excess of a full grade equivalent in both reading (1.7 grades) and math (1.3 grades) in Boston, and .4 of a grade in Pinellas County in math.

However, there is a serious concern that the control group losses may be due to their lower motivation to perform well on the post-test, and that these losses elevate the estimate of program impact. When the conversion to grade equivalents is made on the basis of treatment scores alone, gains range from a non-significant .2 of a grade (or two months) in math in Pinellas to .8 of a grade in Boston in math. Reading gains fell between those two. In Baltimore, where there was no control group, there was a non-significant loss of .2 of a grade in reading, and a significant gain of .5 of a gain in math.

In addition to these treatment effects, the multivariate analysis also showed that a number of academic variables -- absences, last grade completed, presence or absence of disciplinary action -- significantly predicted learning gains. Of the demographic variables, age and having been held back a grade significantly predicted post-test math scores in Boston. In this case the results were counterintuitive: younger youths and youths who have been held back tend to score higher when all other variables are held constant.

Separate regressions were performed in order to determine the impact of participation in STEP on the academic performance of various subgroups of the target population as defined by sex, age and race. The results of these analyses are summarized in Table V-5; full regression tables appear in the Appendix. STEP did not have a differential impact on 14 and 15 year olds. However, as the table shows, the impact of STEP varied according to participants' gender, and in the case of reading, race. It is clear that, in both Boston and Pinellas, black females benefited least from participation in STEP.

A number of additional analyses were undertaken to provide better estimates of program impact, including the aggregation of data from Boston and Pinellas County to estimate program impact on reading and math. These results, which are very similar to those just discussed, appear in the appendix. Similarly, the details of the specification and estimation procedures for the analysis of the impact on learning of program hours are presented in the appendix. As it shows, when length of program stay and learning were simultaneously estimated in order to eliminate the biasing effects of self-selection, there was no detectable relationship between hours and learning. It was not possible with the present data to separate the simple impact of length of program stay on learning from the confounding influence of personal attributes which correlate with self-selection of hours in the program.

Overview of Learning Gains

The ability to achieve short-term learning gains was posited as the first in a series of steps leading, eventually, to a decrease in the high school dropout rate of members of STEP's target population. The analysis supports the hypothesis that the first of these steps has, in fact, been taken for members of the treatment group.

TABLE V-5

IMPACT OF PARTICIPATION IN STEP ON MAT SCALED SCORES IN READING AND MATH, BY SEX AND RACE

Site	Points Advantage For Treatment Youths In:	
	Reading	Math
Boston		
Black Males	30**	60**
Black Females	14	32**
White Males	53**	64**
White Females	37**	36**
Pinellas		
Black Males	18*	31**
Black Females	2	3
White Males	41**	35**
White Females	25*	7

*Significant at the .10 Level
**Significant at or beyond the .05 Level

LIFE PLANNING OUTCOMES

In addition to hypotheses concerning the impact of STEP on academic performance, it was also predicted that participation in STEP would lead to a number of benefits associated with the life planning component. These benefits are related to the general theme of the life planning curriculum: in order for participants to prepare for futures they want for themselves, they must begin now to make critical decisions about education, work and how to respond responsibly to pressures for sexual involvement. In the sections that follow, program impact on educational aspirations, career orientations and fertility-related attitudes and behavior are explored.

Educational Aspirations

Members of the sample were asked two questions designed to measure educational aspirations -- whether they would like to earn a high school diploma and whether they expected to do so. At follow-up, as at baseline, there was very little variation in responses to these questions. Over 99 percent of youths said they wanted a high school diploma; 96 percent said they expected to receive one.

It was not possible, given the lack of variance in these measures, to test the impact of STEP on participants' educational aspirations. Given their gains in academic performance, however, it may be the case that their educational aspirations were positively influenced as well. In order to prevent the same situation in the full-scale demonstration, better indicators will be used -- measures that ask about a range of options instead of focusing solely on the desire to complete high school.

Career Orientations

One aspect of the life planning curriculum is devoted to expanding participants' awareness of their future work lives, and the steps that must be taken to prepare for the careers that they would like to pursue. One of its segments focused on career options open to women, with the goal of influencing young women to pursue non-traditional careers. The sections that follow examine some of the impacts of exposure to this aspect of the life planning curriculum.

Attitudes Towards Non-Traditional Careers. At follow-up, sample youths were asked to respond again to a number of questions measuring attitudes toward work and careers. It has been hypothesized that STEP participants, by virtue of having been exposed to the life planning component, would be more likely than members of the control group to consider it appropriate for women to pursue a wide variety of traditional and non-traditional careers.

One series of questions asked youths to indicate whether they thought it appropriate for women to hold each of a total of 12 jobs -- among them those of a plumber, physician, secretary, teacher and nurse. The mean number of jobs selected as appropriate for women at follow-up are presented by site, race, age and sex in Table V-6. These results show that, counter to the hypothesis, STEP participants did not consider more jobs appropriate for women than did members of the control group. Nor were there extensive differences by age or race. However, as might be expected, girls considered more jobs appropriate for women than did boys.

The multivariate analysis -- which controlled for race, age, public assistance receipt, family size, membership in a female-headed household, pre-test reading score and a number of measures of work attitudes at baseline as well as the number of

TABLE V-6

MEAN NUMBER OF JOBS CONSIDERED TO BE APPROPRIATE FOR WOMEN, BY SEX, AGE, RACE, AND PROGRAM PARTICIPATION

Characteristics	Boston	Pinellas	Baltimore
Sex			
Male	8.86	8.00	10.03
Female	9.21	8.32	10.49
Age			
≤ 14	9.08	8.06	10.26
≥ 15	9.00	8.24	-
Race			
Black	9.17*	8.10	10.36
White	9.76	8.53	12.00
Hispanic	8.47	6.00	9.00
Other	7.74	9.00	-
Program Participation At:			
Baseline			
Treatments	7.98	7.40	8.56
Controls	8.10	7.77	-
Follow-up			
Treatments	9.10	8.19	10.26
Controls	8.99	8.03	-
Total	412	206	68

*Differences among racial groups in Boston were significant at the .10 level.

jobs thought appropriate for women at baseline -- also suggests that there was no significant overall impact of participation in STEP on this measure of sex role stereotypes. These results are presented in Table V-7 which summarizes treatment impacts for both of the career orientation variables. In Boston, the only significant predictor of the number of jobs thought appropriate for women was sex and the baseline measurement of this same variable. In Pinellas County, when all variables are controlled, only the baseline measure is a significant predictor.

One additional analysis was conducted to determine if girls had broadened their perceptions of the number of jobs appropriate for women, since it is the girls for whom such a change in perceptions could be most important. Table V-7 shows the result of a test of the interaction between treatment and sex. This analysis shows that there was a significant impact in Pinellas County, but for males only. Male STEP participants in Pinellas County experienced a significantly higher increase in the number of jobs thought appropriate for women. It is very discouraging, however, that this effect was not found for girls. A change in attitudes might be the first step in encouraging these young women to pursue more highly paid occupations.

Equal Pay for Equal Work. Sample youth were also asked whether they thought that men and women earned the same income when they performed the same work. Table V-8 presents their responses by site, age, race and sex. In Boston, treatment youths at follow-up were significantly less likely than control group youths to believe that men and women are paid the same for the same work -- 75 percent of the control group believed so, but only 66 percent of the treatment group did. In Pinellas County, more control group youths (78 percent) than treatment youths (67 percent) believed that men and women are paid equally, but the difference was not significant.

TABLE V-7

IMPACT OF PARTICIPATION IN STEP ON CAREER PERCEPTIONS, BY SITE

Variable	Analytic Parameters, Boston		Analytic Parameters, Pinellas	
	Coefficient Or Beta	T-Ratio Or Wald Statistic	Coefficient Or Beta	T-Ratio Or Wald Statistic
Jobs appropriate for women, all respondents[a]	0.04	0.18	0.14	0.37
Jobs appropriate for women, interaction between treatment and sex[a]	-0.51	-1.16	1.66	2.15**
Believe that men and women earn equal pay for equal work[b]	-0.44	2.77*	-0.79	3.97**

[a] For these variables, the multivariate analytic technique that was performed was multiple regression, and a t-statistic was used to test for significance.

[b] Since this is a dichotomous variable, the multivariate analytic technique that was performed was logit. In this case a Wald statistic was used to test for significance.

*Significant at the .10 level
**Significant at or beyond the .05 level

TABLE V-8

PERCENT OF RESPONDENTS BELIEVING MEN AND WOMEN ARE PAID EQUALLY FOR EQUAL WORK, BY SEX, AGE, RACE AND PROGRAM PARTICIPATION

Characteristics	Boston	Pinellas	Baltimore
Sex			
Male	76%*	77%**	75%
Female	67%	64%	80%
Age			
≤ 14	67%*	70%	78%
≥ 15	74%	73%	-
Race			
Black	69%	71%	79%
White	80%	75%	67%
Hispanic	66%	0	100%
Other	84%	100%	-
Program Participation At:			
Baseline			
Treatments	72%	76%	73%
Controls	73%	73%	-
Follow-up			
Treatments	66%*	67%	77%
Controls	75%	78%	-
Total Respondents	409	205	68

*In Boston, differences between males and females; 14 and 15 year olds; and treatment and controls at follow-up were significant at the .10 level.

**In Pinellas, differences between males and females were significant at the .05 level.

In both sites, girls were less likely than boys to believe that men and women are paid equally -- in Boston 76 percent of boys and 67 percent of girls believe so. In Pinellas County, 77 percent of boys and 64 percent of girls share this belief. In Boston, but not in Pinellas County, there was a significant difference by age -- older youths were more likely to endorse this belief than younger youths. As Table V-8 shows, there were no significant differences by age, race or sex in Baltimore.

When the multivariate analysis was completed, and the important background and demographic variables were controlled, age was no longer a significant predictor of youths' attitudes in Boston. For both sites, two variables emerged as significant -- the impact of program participation and sex. In both Boston and Pinellas County, two variables predict a reduced likelihood of believing that men and women earn the same income for the same work -- being in the STEP treatment group and being female.

Considering both variables -- the number of jobs appropriate for women and the belief that men and women are paid equally for equal work -- a somewhat ambiguous picture emerges. First, it is clear that STEP does not have the general effect of increasing the number of jobs thought appropriate for women. Only for boys in Pinellas County was there a significant impact of participation in STEP. It is discouraging that there was no such impact for girls at either site. It may be that the increased awareness of sex discrimination in wages that was significant in both sites makes girls less likely to expand their list of possible occupations.

Fertility-Related Outcomes

For many disadvantaged youths -- particularly young women -- adolescent pregnancy or parenthood is a major obstacle to high school completion. It was hypothesized that STEP participants, because of their exposure to both academic remediation and life planning instruction, would be less likely to drop out of school over the long run because of adolescent pregnancy and parenthood. Because of the shortness of the pilot, however, it was not possible to observe the impact of the program on these long-term outcomes. In their stead, variables such as the initiation of sexual activity, consistent use of contraception among sexually active youth, knowledge of methods of birth control, awareness of the consequences of adolescent parenthood -- intermediate variables that serve as proxies for the long-term outcomes -- have been analyzed.

The sections that follow present the results of these analyses. The analysis of birth control knowledge and awareness of the consequences of adolescent parenthood are presented first in some detail. As discussed in Chapter IV, the collection of data about sexual and contraceptive behavior proved difficult. To recapitulate: these data are collected in the follow-up interview after youths had experienced treatment or control group conditions. An analysis of these data suggested that the youths' reported baseline status had indeed been affected by the treatment. In addition, the non-response rate raised the question of how representative of the total population these data were. For these reasons, it was not impossible to conduct a credible impact analysis for these behaviors.

Birth Control Knowledge. At both baseline and follow-up, participants were asked to respond to a two-item index tapping birth control knowledge. These items measured participants' knowledge of which methods of birth control are available without a prescription, and the circumstances under which a young women is likely to conceive. Youths could answer one question, both questions or neither. Table V-9 presents the percentage of youths able to answer both questions correctly at follow-up as it varied by site, race, age, sex and program participation. Treatment youth in both Boston and Pinellas County were better able to answer these birth control knowledge questions at

TABLE V-9

PERCENT OF RESPONDENTS ABLE TO CORRECTLY ANSWER BOTH BIRTH CONTROL KNOWLEDGE QUESTIONS, BY SEX, AGE, RACE, AND PROGRAM PARTICIPATION

Characteristics	Boston	Pinellas	Baltimore
Sex			
Male	42%**	46%	51%
Female	53%	51%	74%
Age			
≤ 14	49%	47%	63%
≥ 15	46%	49%	-
Race			
Black	49%	50%	67%
White	56%	26%	66%
Hispanic	41%	100%	0
Other	31%	100%	-
Program Participation At:			
Baseline			
Treatments	29%	21%	28%
Controls	28%	23%	-
Follow-up			
Treatments	66%**	61%**	63%
Controls	31%	26%	-
Total Respondents	410	205	63

** In both Boston and Pinellas, differences between treatments and controls at follow-up were significant at the .05 level. In Boston, differences between males and females were also significant at the .05 level.

In Boston, 66 percent of treatment youth correctly answered both birth control knowledge questions, while only 31 percent of control group youth could do so. The percentage of control group youth with both correct had barely increased from baseline to follow-up -- only changing from 28 percent to 31 percent. Treatment youth, however, showed a substantial increase: at follow-up, more than twice as many participants (66 percent) could answer both questions as could answer them at baseline (29 percent).

In Pinellas County, 61 percent of treatment youth could correctly answer both questions tapping birth control knowledge at follow-up. This is a significantly higher percentage than the 26 percent of controls who could do so. The percentage of controls able to answer both questions barely moved over the course of the summer -- from 23 percent at baseline to 26 percent at follow-up. By contrast, the number of treatment youths correctly answering both virtually tripled, increasing from 21 percent to 61 percent.

In Baltimore, where there were only treatment youths, the baseline-to-follow-up increase in the percentage of youth correctly answering both questions -- from 28 percent to 63 percent -- is comparable to that of Boston.

Table V-9 also presents birth control knowledge by key demographic variables -- sex, age and race. As it shows there were few significant differences. In Boston, but not in Pinellas County or Baltimore, there were significant differences by sex. Males were significantly less likely to answer both questions correctly than were females -- 42 percent of males and 53 percent of females did so. While females scored higher than males in the other sites -- and the magnitude of the difference is particularly large for Baltimore -- these differences were not significant. At none of the sites were there significant differences by race or age.

To estimate program impact, participants' responses to the birth control knowledge questions were converted to a scale such that youth unable to answer either item were assigned a score of zero; those answering one question received a score of one; and those answering both received a score of two. Program impact was then estimated, holding constant a number of variables including age, race, sex, family size, public assistance receipt, membership in a female-headed household, school absences, baseline reading score and the baseline measurement of birth control knowledge.

The results of this analysis appear in Tables V-10, which presents treatment impacts for two fertility-related variables. They confirm the results suggested by the simple percentages presented in Table V-9. Even when a number of background factors, including baseline knowledge of birth control, are controlled, participation in STEP produced significantly higher levels of birth control knowledge than was the case in its absence. STEP has thus achieved an important objective -- participants have become better informed about the birth control options available to them.

In addition to the baseline score on birth control knowledge, both sex and pre-test scores in reading were significantly related to birth control knowledge at follow-up in Boston. That is, females scored significantly higher than males on birth control knowledge at follow-up. In addition, youths with high academic performance at baseline were likely to score high on birth control knowledge at follow-up. In Pinellas County, as in Boston, pre-test reading scores and baseline knowledge of birth control were both significantly related to birth control knowledge at follow-up. In Pinellas, however, there were no significant differences by sex.

Views of Adolescent Parenthood. The second measure of fertility-related attitudes is knowledge of the consequences of adolescent parenthood -- a two-item scale asking participants the

TABLE V-10

IMPACT OF PARTICIPATION IN STEP ON FERTILITY-RELATED ATTITUDES BY SITE

Variable	Regression Parameters, Boston		Regression Parameters, Pinellas	
	Coefficient	T-Ratio	Coefficient	T-Ratio
Birth Control Knowledge	0.42	6.28**	0.62	5.95**
Knowledge of the Consequences of Adolescent Pregnancy	0.19	2.69**	0.20	1.80*

*Significant at the .10 level
**Significant at or beyond the .05 level

cost of raising a child to age 18 and the likelihood that a girl experiencing a pregnancy in adolescence will finish high school. Table V-11 presents the percentage of youth able to answer both questions correctly at follow-up. As it shows, treatment youths in Boston were significantly more likely to know the answers to both questions than were members of the control group: 34 percent of treatments correctly answered both, while only 25 percent of controls could do so. In fact, twice as many treatments at follow-up knew the answers to both questions as knew them at baseline (34 percent versus 17 percent). For controls, however, there was only a 3 percent increase from baseline to follow-up. Follow-up scores were also significantly related to race in Boston. There, whites were more likely to know the answer to both questions than were members of other racial groups -- 42 percent of whites answered both questions, while only 29 percent, 24 percent and 6 percent of blacks, Hispanics and others, respectively, could do so.

In Pinellas County, knowledge of the consequences of adolescent parenthood at follow-up did not vary significantly as a function of any of these variables. While a higher percentage of the treatment group than the control group knew the answers to both questions (33 percent versus 22 percent) prior to statistical adjustment, the differences between the unadjusted percentages did not reach statistical significance. Similarly for Baltimore, follow-up knowledge of the consequences of adolescent parenthood was not significantly related to any of these variables.

As with birth control knowledge scores, an index measuring knowledge of the consequences of adolescent pregnancy was created. Scores ranged from zero to two depending upon the number of questions a youth could answer correctly. Scores on this measure were then analyzed for the impact of participation in STEP, holding constant baseline knowledge of the consequences of adolescent parenthood as well as the same list of variables used for the birth control knowledge analysis.

TABLE V-11

PERCENT OF RESPONDENTS ABLE TO ANSWER BOTH QUESTIONS MEASURING AWARENESS OF THE CONSEQUENCES OF ADOLESCENT PREGNANCY, BY SEX, AGE, RACE, AND PROGRAM PAPTICIPATION

Variable	Boston	Pinellas	Baltimore
Sex			
Male	29%	25%	36%
Female	30%	34%	40%
Age			
≤ 14	32%	31%	38%
≥ 15	27%	26%	-
Race			
Black	29%*	28%	36%
White	42%	35%	67%
Hispanic	24%	0	0
Other	6%	0	-
Program Participation At:			
Baseline			
Treatments	17%	13%	27%
Controls	22%	13%	-
Follow-up			
Treatments	34%**	33%	38%
Controls	25%	22%	-
Total Respondents	412	206	68

*In Boston, differences among racial groups were significant at the .05 level.

**In Boston, differences among treatments and controls at follow-up were significant at the .05 level.

Holding constant relevant baseline and demographic characteristics, the impact of participation in STEP on awareness of the consequences of adolescent parenthood was significant for participants in both sites (see Table V-10). In Pinellas County, the only other variable significantly predicting knowledge of the consequences of an adolescent pregnancy at follow-up was the baseline measurement of this variable. In Boston, follow-up scores were also significantly related to family size. There, net of the influence of the other variables in the analysis, youths from smaller families learned more about the consequences of adolescent parenthood than youths from larger families.

Overview of Life Planning Outcomes

The life planning component is an important part of the STEP treatment, one which is hypothesized to have a number of positive effects including increasing participants' educational aspirations, broadening their career aspirations, and (over the long term) reducing the school dropout rate due to adolescent parenthood. For various reasons, the ability to explore the full range of life planning impacts was limited in the pilot summer. These limitations notwithstanding, the life planning component appears to have attained some noteworthy successes.

Participants are, at the end of the program, more aware of what adolescent parenthood would mean for their capacities to reach goals they set for themselves, particularly educational goals. In addition, they are more knowledgeable about means to prevent pregnancy, if they are sexually active. What remains to be done is to cultivate a desire for achievement strong enough to motivate practice of consistent and effective fertility control.

The likelihood of this happening seems dependent upon the joint effectiveness of both the life planning and academic remediation components of the STEP treatment. An indication that STEP may be capable of inculcating a desire for achievement comes from the strong academic gains experienced by treatment youth.

CHAPTER VI

SUMMARY

EARLY PROGRAM LESSONS

This chapter summarizes the major findings of P/PV's preliminary assessment of the STEP program model, examining both its operational feasibility and its short-term impacts on the academic performance and life planning attitudes and behavior of its participants. This information is being used to strengthen the STEP program model, refine the research design and provide a useful description of program operations.

The experience to date has been encouraging. The 1984 summer pilot has shown that, in general, STEP works. First, it seems to have worked operationally. The short period available for site development and program planning notwithstanding, operators were able to put into place a program that in most instances delivered the treatment, pretty much as designed, to the target population.

Similarly, STEP appears to have attained a measure of success in achieving for its participants some of the impacts intended. As discussed in Chapter V, participants made significant gains in basic academic skills as measured by scores on the Metropolitan Achievement Test (MAT) subtests in reading and math. In addition, STEP participants also achieved some improvements with respect to life planning.

While the bulk of the evidence is encouraging, there were a number of findings that represent causes for concern. First, there was an unevenness in the quality of the remediation component as it was implemented at the sites. This component must be strengthened if the observed gains are to be sustained and advanced. Also, while the data on the issue are not without problems, the high level of sexual experience among participants suggests a need to strengthen the life planning component. Another cause for concern lies in the fact that so few participants were definitely interested in participating in STEP a second summer.

In the sections that follow, these findings are detailed, beginning with those related to program implementation and concluding with those related to impacts upon participants.

PROGRAM IMPLEMENTATION

The major implementation finding is that the STEP model is versatile enough to be effectively implemented even given a number of variations. While certain practices seemed more effective than others -- for instance, co-locating work and remediation sites -- alternative practices resulted in a program that ran fairly smoothly.

Academic Remediation

The content, format and amount of remediation varied substantially from site to site and, in Boston, among individual work/remediation sites. In addition, there were variations in the amount of computer-assisted instruction available at the sites. Although there may have been differences in perceived ease of implementation, none of these approaches was clearly more effective than any of the others in attaining learning gains. STEP participants attained learning gains regardless of which approach they followed.

However, it is too early to know how stable these impacts are. Once participants and controls return to their regular school environment, summer impacts could dissipate. Or, it may be that the observed impacts are driven by the losses experienced by a group of control youths who, unlike treatment youths, have no motivation to perform well on the post-test. For all of these reasons, the remediation component must be strengthened if it is to result in lower drop-out rates.

Life Planning

Given initial reservations about the sensitive nature of the subject matter, remarkably few problems were encountered in implementing the life planning component. However, the questions about sexual behavior on the follow-up questionnaire did provoke a few complaints from parents and a high non-response rate from sample youth. Nevertheless, this program component genuinely engaged participants, and was seen by teachers and counselors as useful and effective. The preparation and planning involved in developing this program element produced a smooth, well-run component.

Several elements contributed to the successful implementation of the life planning component. First, P/PV developed a prescribed curriculum that sites were asked to adopt more or less wholesale. All life planning instructors attended a training session that familiarized them with course content and helped them anticipate difficult questions and situations. In addition, some received limited technical assistance during the summer.

It became very clear that given their level of sexual experience, ignorance of methods of contraception and failure to practice contraception, participants in this target population are greatly in need of the fertility-related aspects of the life planning component. Participation in STEP has, in many cases, brought to these youth their first systematic exposure to sex education and family planning instruction.

Work Experience

The work experience component of STEP was also implemented smoothly, mirroring in most respects the work experience provided for youth participating in the Summer Youth Employment Program. Significantly, program operators did not experience problems developing half-day jobs. In Boston and Baltimore, this was accomplished easily in schools that served as both remediation sites and work sites, thus providing a smooth transition between classes and work. Pinellas County, where two youths filled one created job, experienced only minor difficulties.

Participant Response

In spite of generally positive responses to individual program components, the number of youths saying they would definitely like to return for a second summer -- 65 percent in Pinellas; 43 percent in Boston and 29 percent in Baltimore -- was disappointing. Although few said that they definitely would not want to return, the importance of maintaining a high level of participation makes this a serious concern. The program continuation rate from one summer to the next must be increased if STEP is to be effective in reducing high school drop-out rates. End-of-summer projections are not necessarily accurate predictions of whether a youth will return the second summer, (particularly given limited job opportunities) but they are early warning signals.

One approach to increasing continuity would be to more strongly reinforce the message that satisfactory participation in the first summer leads to a guaranteed job in the second. For example, this message could be incorporated into the planning and decision-making exercises of the life planning component.

Another approach could be to more carefully integrate computer-assisted instruction into the remediation component. Although data do not exist to show a relationship between the use of computers and the willingness to return for a second summer, participants valued the opportunity to use computers and would have liked more computer time.

PROGRAM IMPACTS

Life Planning

At the end of the summer, participants had significantly greater knowledge of birth control information than did members of the control group. In addition, they had a better appreciation of the consequences of adolescent parenthood than did controls.

Data problems did not permit an examination of the impact of program participation on sexual and contraceptive behavior. However, the number of studies of adolescent sexual behavior that have found improvement in birth control knowledge coupled with a lack of improvement in contraceptive utilization sounds a cautionary note for STEP. This is a difficult area in which to achieve change. Even if it proves possible to achieve significant improvements in academic performance, as the data suggest, such achievement may all go for naught if significant numbers of these youth are involved in early pregnancy and child-rearing.

Making the optional visit to a comprehensive health clinic a mandatory part of the curriculum may serve to increase the impact of STEP on fertility-related behavior. Such a visit would locate for participants places in their own neighborhoods where they could go for contraceptive information and supplies. It would also de-sensitize the process of actually visiting such a place.

Once having been there, returning should be easier. The use of materials and films that are better geared to STEP participants -- e.g., materials that involve males in responsible use of contraception and films that portray the situations faced by low-income minority group youth -- may also improve program impact in this area. Increasing the proportion of the life planning curriculum devoted to issues of fertility control may also have positive impact.

STEP has also attempted to raise participant consciousness of the world of work. One aim of the project has been to acquaint participants with some of the work/career options available to them, and the training requirements and salaries associated with each. As part of this exercise, salary differentials for traditionally male and traditionally female positions become apparent.

One project goal is to influence some young women to consider following careers in areas not traditionally female. It appears, however, that STEP was not successful in this aim. At follow-up, only male participants in Pinellas County program had expanded the number of careers thought appropriate for women. This may be related to the fact that STEP participants are significantly more likely than control group youth to believe that men and women do not earn the same salaries when they do the same work. While this is true (all things being equal), female participants should nevertheless be encouraged to pursue traditionally male careers for the higher salaries that are associated with them.

Impacts on Academic Performance

Considering the net impact of treatment gains and control group losses, STEP participants increased their basic skills substantially beyond what they would be in the absence of the program. Participants increased their reading levels by just under one full grade equivalent in Pinellas County, and more than one and one-half grade equivalents in Boston. For math, youths gained half a grade in Pinellas County, and one grade and three months in Boston. Considering treatment gains alone, estimates are more conservative; they range from a non-significant loss of .2 grade (Baltimore reading) to a siginificant gain of .8 grade (Boston, math).

When one considers the alternative, this accomplishment seems even more significant. Given work experience alone, disadvantaged young people who participate in the Summer Youth Employment Program do earn income and become acquainted with the world of work. However, they suffer significant losses in the basic skills that could increase their value to employers. Participation in STEP confers both classes of benefits -- work benefits and basic academic skills.

REFERENCES

Berlin, Gordon. "Remedial Education, Social Competence and Work Experience for Disadvantaged Youth: Proposal for a Redesign of the Summer Youth Employment Program." Ford Foundation, 1983.

Bachman, Jerold G., et. al., Youth in Transition: Volume VI: Adolescence to Adulthood - Change and Stability in the Lives of Young Men, (Ann Arbor: Institute of Social Research, 1978).

Coombs, J. and Cooley, W.W. "Dropouts: In High School and after High School." American Educational Research Journal, 1968, 5, 343-358.

George Farkas, et. al., Final Program Impacts of the Youth Incentive Entitlement Pilot Projects. (Cambridge, Massachusetts: Abt Associates, Inc., 1983).

Barbara Heyns, Summer Learning and the Effect of Schooling. (New York: Academic Press, 1978).

Kapsis, Robert and William Protash, Summer Motivation and Retention. CUNY, 1983.

Malizio, Andrew G. and Whitney, Douglas R. "Educational Credentials in Employment: A Nationwide Survey. Paper presented at the Lifelong Learning Conference. College Park, Maryland: February 16-17, 1984.

Presser, H.B. "Social Consequences of Teenage Childbearing." In Chilman, C. (ed.) Teenage Childbearing: Recent Research on the Determinants and Consequences. Washington, D.C.: Government Printing Office, 1978.

Sum, Andrew, et al., "Educational Attainment, Academic Ability, and the Employability and Earnings of Young Persons: Implications for the Planning and Design of JTPA Youth Programs Prepared for a Symposium on Serving Disadvantaged School Dropouts. Brandeis University, December, 1983.

Taggart, Robert, A Fisherman's Guide: An Assessment of Training and Remediation Strategies (Kalamazoo, Michigan; W.E. Upjohn Institute, 1981).

Trussell, T.J. "Economic Consequences of Teenage Childbearing." Paper presented at the Conference on the Consequences of Adolescent Pregnancy and Childbearing. October, 1975.

Turnage, Wayne A. "Factors Influencing High School Dropouts: A Literature Review", (New York, NY: Manpower Demonstration Research Corporation, 1982).

APPENDIX A

DATA APPENDIX

This appendix contains a brief explanation of each variable used in the multivariate analysis along with its corresponding descriptive statistics. This information is divided into four tables which follow.

The first table (Table A-1) lists the abbreviations associated with the variables as well as the type of variable and the source of the data.

The second table (Table A-2) presents descriptive statistics for the subset of the data base utilized primarily in the life planning analysis, the results of which are presented in Tables B-1 through B-6, B-21 and B-22.

Table A-3 describes the data used in the math and reading learning analysis (Tables B-7 through B-14, and B-18 through B-20) and Table A-4 presents the subset of that data which was analyzed when complete hours information was required (as in the analysis presented in Tables B-15 through B-17, and B-23 through B-26).

TABLE A.1

ANALYSIS VARIABLE DESCRIPTIONS

VARIABLE NAME	TYPE	DESCRIPTION OF VARIABLE	SOURCE
STDMATH1	(*)	PRE-PROGRAM MATH SCORE	M.A.T.
STDMATH2	(*)	POST-PROGRAM MATH SCORE	M.A.T.
STDREAD1	(*)	PRE-PROGRAM READING SCORE	M.A.T.
STDREAD2	(*)	POST-PROGRAM READING SCORE	M.A.T.
BLACK	(0,1)	SELF-EXPLANATORY	APPLICATION
HISPANIC	(0,1)	SELF-EXPLANATORY	APPLICATION
TREAT	(0,1)	MEMBER OF TREATMENT OR CONTROL GROUP	AS RANDOMLY ASSIGNED
BOSTON	(0,1)	FROM BOSTON DATA SET	AS RECORDED
AGE	(*)	REPORTED AGE	BASELINE/ ENDLINE
OVER14	(0,1)	OVER 14 YEARS OF AGE	BASELINE/ ENDLINE
PUBASSIS	(0,1)	RECEIVING SOME FORM OF PUBLIC ASSISTANCE	APPLICATION
FAMNUM	(*)	NUMBER OF PEOPLE IN FAMILY	APPLICATION
FEMPRNT	(0,1)	FEMALE HEAD OF HOUSEHOLD	APPLICATION
GRADE83	(*)	REPORT OF LAST GRADE COMPLETED AS OF SUMMER 1983	APPLICATION
MISDAYS	(*)	DAYS ABSENT DURING '83-'84 SCHOOL YEAR	BASELINE/(PINELLAS) B.P.S.RECORDS (BOSTON)

TABLE A.1 (cont'd.)

ANALYSIS VARIABLE DESCRIPTIONS

VARIABLE NAME	TYPE	DESCRIPTION OF VARIABLE	SOURCE
DAYSOUT	(*)	DAYS ABSENT DURING '83-'84 SCHOOL YEAR	BASELINE
REPEATED	(0.1)	REPEATED A GRADE	BASELINE
SUSPEND	(0,1)	SUSPENDED FROM SCHOOL	BASELINE
HOURS	(*)	TOTAL HOURS IN PROGRAM	TIME SHEETS
COMPLETE	(0,1)	COMPLETED 75% OR MORE OF PROGRAM	COMPUTED
KNOWBC	(* *)	AWARE OF BIRTH CONTROL METHODS	COMPUTED FROM BASELINE
KNOWBC2	(* *)	AWARE OF BIRTH CONTROL METHODS	COMPUTED FROM ENDLINE
KNOWKID	(* *)	AWARE OF CONSEQUENCES OF TEENAGE PREGNANCY	COMPUTED FROM BASELINE
KNOWKID2	(* *)	AWARE OF CONSEQUENCES OF TEENAGE PREGNANCY	COMPUTED FROM ENDLINE
EQEARNS	(0,1)	BELIEVE WOMEN AND MEN EARN EQUAL PAY	COMPUTED FROM BASELINE
EQEARNS2	(0,1)	BELIEVE WOMEN AND MEN EARN EQUAL PAY	COMPUTED FROM ENDLINE
WOMENJOB	(*)	NUMBER OF JOBS THOUGHT APPROPRIATE FOR WOMEN	COMPUTED FROM BASELINE
WOMENJOB2	(*)	NUMBER OF JOBS THOUGHT APPROPRIATE FOR WOMEN	COMPUTED FROM ENDLINE
OK4MAN	(0,1)	TRADITIONAL FEMALE JOB OK FOR A MAN	COMPUTED FROM BASELINE
OK4WOMAN	(0,1)	TRADITIONAL MALE JOB OK FOR A WOMAN	COMPUTED FROM BASELINE

(*) Continuous variable
(**)Number of correct responses -- 0, 1, or 2.
(0, 1) Dummy variable for which 0 indicates a negative response
and 1 indicates a positive response.
M.A.T. = Metropolitan Achievement Test
B.P.S. = Boston Public School

TABLE A.2

DESCRIPTIVE STATISTICS FOR DATA USED IN LIFE PLANNING ANALYSIS

VARIABLE DESIGNATION	NUMBER OF NON-MISSING VALUES	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
BOSTON	621	0.6650	0.4724	0	1
MALE	621	0.5072	0.5004	0	1
BLACK	621	0.6634	0.4729	0	1
HISPANIC	621	0.1562	0.3633	0	1
OVER14	621	0.4911	0.5003	0	1
PUBASSIS	621	0.6795	0.4670	0	1
FAMNUM	612	4.8072	1.7519	0	12
FEMPRNT	609	0.6864	0.4643	0	1
GRADE83	613	7.8206	0.9095	5	10
REPEATED	616	1.3685	0.4828	1	2
DAYSOUT	543	13.4291	13.8008	0	105
TREAT	621	0.5233	0.4999	0	1
COMPLETE	621	0.8116	0.3914	0	1
STDREAD1	607	715.0132	69.5001	501	951
STDMATH1	607	702.0049	75.4038	381	996
KNOWBC	615	0.9772	0.7372	0	2
KNOWBC2	614	1.3078	0.7456	0	2
KNOWKID	617	0.8136	0.7043	0	2

TABLE A.2 (cont'd.)

VARIABLE DESIGNATION	NUMBER OF NON-MISSING VALUES	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
KNOWKID2	618	1.0227	0.7507	0	2
EQEARNS	617	0.7391	0.4395	0	1
WOMENJOB	615	7.8911	0 .8899	1	12
WOMENJ2	613	8.7423	2.9598	1	12
OK4MAN	609	0.6601	0.4741	0	1
OK4WOMAN	608	0.8306	0.3754	0	1

TABLE A.3

DESCRIPTIVE STATISTICS FOR DATA USED IN LEARNING ANALYSIS

EXPLANATORY VARIABLE	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
BOSTON	0.6908	0.4626	0	1
MALE	0.5063	0.5004	0	1
BLACK	0.6510	0.4771	0	1
HISPANIC	0.1700	0.3760	0	1
OVER14	0.4828	0.5002	0	1
PUBASSIS	0.6998	0.4588	0	1
FAMNUM	4.8029	1.7139	1	12
FEMPRNT	0.6854	0.4648	0	1
SUSPEND	0.4539	0.4983	0	1
GRADE83	7.8300	0.9089	5	10
REPEATED	0.6184	0.4862	0	1
MISDAYS	20.8843	22.2152	0	141
TREAT	0.5226	0.4999	0	1
COMPLETE	0.8119	0.3911	0	1
STDREAD1	716.7288	67.3999	505	951
STDMATH1	702.3454	74.3961	381	996
STDREAD2	713.0488	66.6462	516	927
STDMATH2	703.5063	81.4711	453	999

SAMPLE SIZE = 553

TABLE A.4

DESCRIPTIVE STATISTICS FOR DATA INVOLVING HOURS IN THE ANALYSIS

EXPLANATORY VARIABLE	MEAN	STANDARD DEVIATION	MINIMUM	MAXIMUM
BOSTON	0.7672	0.4230	0	1
MALE	0.5065	0.5005	0	1
BLACK	0.6228	0.4852	0	1
HISPANIC	0.1853	0.3890	0	1
OVER14	0.4849	0.5003	0	1
PUBASSIS	0.7047	0.4567	0	1
FAMNUM	4.7306	1.6361	0	10
FEMPRNT	0.6810	0.4666	0	1
SUSPEND	0.4440	0.4974	0	1
GRADE83	7.8664	0.9175	0	10
REPEATED	0.5841	0.4934	0	1
MISDAYS	22.0388	22.9294	0	141
TREAT	0.4612	0.4990	0	1
STDREAD1	720.7155	65.7159	505	934
STDMATH1	700.6164	76.1696	381	996
STDREAD2	714.6659	66.3633	516	927
STDMATH2	701.5819	81.3561	453	999
HOURS	185.4836	41.5429	0	280

SAMPLE SIZE = 464

APPENDIX B

TECHNICAL APPENDIX
OF THE STEP PROGRAM ANALYSIS

This appendix presents the estimations of the results that were summarized in Chapter V. In the tables that follow, the names of the variables bear the same abbreviations as were presented in Appendix A which also contains the summary statistics of the data used in the following analysis.

A similar specification was applied to most of the multivariate models used in the analysis of the impact of participation in STEP. Included in the explanatory variables were the basic demographic characteristics of age, race, and sex as well as the variables that capture the youths' home environment -- among them family size, residence in a female-headed household, and public assistance receipt. For learning analyses, the models included a number of measures of academic background, including the last grade attended, days absent from school, grade retention, school suspensions, and baseline scores on the Metropolitan Achievement Test in reading and math. For non-learning analyses the number of days absent from school, and the pre-program reading scores were used as proxies for academic attitudes and abilities.

In the equations modeling the differential impact of STEP on various measures of attitude and knowledge, the pre-program measurement of that same variable was included as a regressor. That is, the model took the following form:

$$y_2 = f(y_1, x, t, e)$$

where: y_2 = the post-program value of the variable of interest

y_1 = the pre-program value of the y_2 variable

x = a vector of exogenous variables

t = whether or not the youth received the STEP treatment

e = a stochastic disturbance term with a mean of zero and a constant variance

$f(\cdot)$ = a linear combination

This specification made it possible to control for pre-existing differences among youths while the impact of STEP was measured. An alternative approach would be to model the difference between pre-program and post-program levels of the variable in question. Such a model would take the following form:

$$y_2 - y_1 = f(x, t, e)$$

However, this model is identical to the one above if in the first model the coefficient of y_1 is constrained to be 1. It is preferable, however, to first estimate the unconstrained version of the model, and then test the reasonableness of imposing such a restriction. It turns out that, in the case of MAT scores, the estimated coefficient of the pre-program level of achievement was significantly different from 1 in every specification of learning that was produced. Another reason to avoid modeling differences is the fact that the higher the reliability of a measure (MAT scores for example), the lower the reliability of the difference between two measurements.

Using the first model outlined above, Ordinary Least Squares estimation was applied to the specific equations represented in Tables B-1 through B-17. Tables B-1 - B-10 (the models of KNOWBC2, KNOWKID2, WOMENJ2, STDMATH2, and STDREAD2 each for Boston and Pinellas) represent the typical specification discussed above. The regressions on WOMENJ2 shown in Tables B-5 and B-6 were respecified to include a treatment-sex interaction term because of an apparent difference observed between males and females in the means of WOMENJ2 and WOMENJOB. Those results are presented in Table B-5a and Table B-6a.

In an effort to increase the efficiency of the parameter estimates of the learning equations reported in Tables B-7 - B-10, pooled Boston-Pinellas models for reading and math were also estimated. It was noted in the separate site model specifications that aside from treatment, the largest differences between each site's estimated parameters relative to their respective standard errors appeared to be in the variable measuring family size and school suspensions. So site interaction terms for FAMNUM and SUSPEND as well as TREAT were included through the use of a dummy variable for Boston.

An F-test was then performed to determine if the parameter restrictions implied by pooling the two sites, using only the three interaction terms just mentioned, were indeed legitimate. The result of this test was an F statistic of 9 and 526 degrees of freedom, which equalled 0.4372 for the math equation and 1.3319 for the reading equation. Since neither of these F-statistics is significant at the .05 level, the hypothesis that the restrictions implied by pooling the data are valid cannot be rejected.

As a further specification verification the hypothesis that the coefficients of all of the other possible site/interaction terms if estimated, would be simultaneously equal to zero was tested. This test yielded an F statistic, with 9 and 526 degrees of freedom, which equalled 0.4282 for math and 1.3264 for reading. Neither of these statistics was significant at the .05 level, lending further support to the specification of only three site interaction terms.

These pooled math and reading results, which are listed in Tables B-11 and B-12, produced virtually the identical results with respect to STEP impact on reading and math as the unpooled models.

A decision on the inclusion of interaction terms also had to be made in modeling the number of hours spent in the program (the results of which appear in Tables B-15 and B-16). Because of the remediation component of the treatment, it was hypothesized that the treatment youth would react differently, in deciding whether to stay with the program, according to their profile of academically related variables. Specifically, their reactions would vary according to their achievement level on the MAT prior to the program, the number of days of school they missed in the previous year, and grade repetition since these variables are all related to academic performance when compared to similar control youth.

We tested the validity of specifying only the four treatment interaction terms discussed above by also estimating the equation with treatment interacted with every variable in the model, and then tested the hypothesis that all but those four interactions were simultaneously equal to zero. We obtained an F statistic of 0.4309 (with 9 and 328 degrees of freedom) in Boston indicating that that hypothesis could not be rejected at a .05 significance level. This same test was not performed for Pinellas County because of the overall non-significance of the hours estimation (Table B.16).

In an attempt to obtain a significant estimate of the relationship for hours in the program in Pinellas, we pooled the Boston and Pinellas County data and the equation was re-estimated, after including site interactions with the four academically related variables (STDREAD1, STDMATH1, REPEATED, AND MISDAYS), as well as with TREAT and the "treatment/pre-program MAT scores" interaction terms. An F-test (with 11 and 417 degrees of freedom) of the hypothesis that all of the implied parameter restrictions of this pooled equation are valid produced a statistic of 1.2027, indicating that such a hypothesis cannot be rejected at a .05 level of significance. The result of this pooled specification appears in Table B.17. The conclusions which can be drawn from it do not differ substantially from the individual site estimations -- which is to say there is no clear determinant of hours in Pinellas County, and a reasonably strong relationship between pre-program achievement test level and the length of stay in the program for the treatment group in Boston.

It should be noted that the relationship just identified for Boston treatment youth is probably stronger than the magnitude of the t-statistics in Tables B.15 and B.17 would suggest. This is because of the multicolinearity problem caused by the high correlation between the math and reading MAT tests. Two methods of dealing with this problem were tried. The first was to estimate the model with only the reading score, and the second was to sum the math and reading into one total score. In both instances the indicated variable and its interaction with treatment were significant at the .05 level, indicating that a treatment youth scoring at the low end of the sample tends to remain in the program for a shorter period than a comparable control youth. The inverse relationship also holds, i.e., a treatment youth obtaining a MAT score at the high end of the sample range is more likely to stay with the program longer than a comparable control youth.

Because the lack of complete hours data made such large inroads into the data set, a second model of time in the program was attempted. It simply models whether or not a youth completed the program, and it was specified with the same regressors as were included in the hours analysis above.

With completion being defined as 75% of the time designed for the program, it was anticipated that if a youth actually attended the entire program and was missing some hours data, he or she would still be likely to be included in the completion category. This would allow him/her to be included in the analysis in spite of the missing information. It was hoped, the larger sample size might yield more definitive results than the hours estimates.

Because of the dichotomous nature of the dependent variable (completion) and the resulting heteroskedasticity, as well as the desire to constrain predicted probabilities of completion to lie in the interval (0,1), a LOGIT maximum likelihood estimation of this model was performed. The results of this estimation are presented in Tables B.18 and B.19 for Boston and Pinellas County, respectively. Because of the occasional difficulty in interpreting the coefficients in a LOGIT model, since they represent the change in the log of the odds ratio, the derivative of the model with respect to each parameter (when the function is evaluated at the mean value of every variable) has also been provided in the tables.

In order to assess the overall significance of these models, a likelihood ratio test of the hypothesis that all of the parameters except the constant are simultaneously zero was performed. As can be seen, this indicates that the LOGIT specification of program completion in Pinellas is significant at the .05 level while the one for Boston is not. However, it should be noted that this test is only asymptotically distributed chi-squared and so may very well be suspect in the case of a sample as small as Pinellas County.

To improve on these results, the Boston and Pinellas County data were pooled in a fashion identical to the hours estimation done previously, and while the likelihood ratio test in this case (see Table B.20) shows the overall specification to be significant, virtually all of the estimated parameters are in significant.

The reason for the lack of success in the completion estimation is probably two-fold. First the magnitude of the problem of incomplete hours data was large in Pinellas County, and in spite of the 75% completion criterion described above there may have been sufficient numbers of youth calculated to be non-completers who actually did complete to have contaminated the analysis. The second problem lies in Boston where the percentage of completion (as defined) was so high (roughly 90%) that there was probably not enough variance left over for the model to explain.

For reasons similar to those previously discussed, a LOGIT specification was also applied to the EQEARNS2 model for Boston and for Pinellas (see Tables B.21 and B.22). Since the data in this instance did not suffer from the problems just discussed for completion, the procedure performs reasonably better. A test in these equations was also performed to check for the presence of a treatment/sex interaction effect and in both Boston and Pinellas County the indication was that this effect was not different from zero.

Finally, in order to determine the impact of the STEP program on an incremental basis (e.g., how much test performance is improved through longer exposure to the remediation program), and to attempt an increase in the efficiency of estimates previously obtained, the model for math and the model for reading were respecified to include not only a term measuring treatment effect, but also a term to measure the interaction between treatment and hours in the program. A term measuring only hours in the program was also included to capture any residual effect that the job component of the program might have, although this effect was anticipated to be insignificant.

This estimation of hours of treatment impact was not straightforward because the same factors which motivate a youth to apply himself and achieve a significant improvement in math and/or reading, are the same factors that will motivate a youth to continue with a job or remediation program instead of simply dropping out. This means that the hours-in-the-program is an endogenous variable in the math and reading equations. Left unattended, this problem would result in biased and inconsistent estimates of the parameters in the math and reading equations so specified. This can be solved by estimating the system of equations (hours, math and reading) simultaneously.

There is also a second problem in that the interaction term between hours in the program and treatment, introduces a nonlinearity into the specification of the variables in the system. For this reason, the system of equations for Boston and Pinellas were estimated using Nonlinear Two-Stage Least Squares. The results are presented in Table B-23 for Boston and in Table B-24 for Pinellas. The estimates show that no clear relationship between the number of hours spent in the program and learning can be found when the determinants of hours-in-the-program are estimated simultaneously. This has the effect of netting out any self-selection effects of the more capable youth remaining with the program longer.

The relationship between hours and learning was twice more estimated -- once using a quadratic, and once using a cubic specification of the model -- with no appreciable difference in the fit. Additionally, an Iterated Nonlinear Three-Stage Least Squares method of estimation was applied to the model with the results displayed in Table B-25 and Table B-26. This method has the added advantage of being invariant with respect to normalization, but as can be seen, it still did not provide a statistically signfiicant estimate of an hours-learning relationship.

TABLE B.1

DETERMINANTS OF BIRTH CONTROL KNOWLEDGE AT FOLLOW-UP IN BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	-0.5051	-1.14
MALE	-0.1336	-2.01**
BLACK	-0.0467	-0.56
HISPANIC	-0.0680	-0.67
OVER14	-0.0772	-1.16
PUBASSIS	0.0214	0.28
FAMNUM	-0.0202	-0.93
FEMPRNT	0.0933	1.22
DAYSOUT	-0.0007	-0.30
STDREAD1	0.0019	3.52**
KNOWBC	0.3910	8.34**
TREAT	0.4151	6.28**

R-SQUARED =0.3392

ADJUSTER R-SQUARED =0.3165

F-TEST OF OVERALL SIGNIFICANCE
WITH 11, 320 DEGREES OF FREEDOM =14.935**

SAMPLE SIZE =332

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.2

DETERMINANTS OF BIRTH CONTROL KNOWLEDGE AT FOLLOW-UP IN PINELLAS COUNTY

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	-1.4412	-2.34**
MALE	0.0311	0.29
BLACK	0.2956	1.73*
OVER14	-0.1077	-1.05
PUBASSIS	0.0122	0.12
FAMNUM	0.0018	0.07
FEMPRNT	-0.0174	-0.15
KNOWBC	0.3043	4.32**
STDREAD1	0.0026	3.32**
DAYSOUT	0.0032	0.65
TREAT	0.6231	5.95**

R-SQUARED =0.3103

ADJUSTED R-SQUARED =0.2704

F-TEST OF OVERALL SIGNIFICANCE
WITH 10, 173 DEGREES OF FREEDOM =7.783**

SAMPLE SIZE =184

*Significance at the .10 level.
**Significance at the .05 level.

TABLE B.3

DETERMINANTS OF KNOWLEDGE OF CONSEQUENCES OF ADOLESCENT PREGNANCY AT FOLLOW-UP IN BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	0.3583	0.74
MALE	-0.0988	-1.38
BLACK	-0.0324	-0.35
HISPANIC	-0.0177	-0.16
OVER14	-0.0053	-0.07
PUBASSIS	-0.0628	-0.75
FAMNUM	-0.0638	-2.66**
FEMPRNT	0.0027	0.03
KNOWKID	0.4424	8.16**
STDREAD1	0.0007	1.27
DAYSOUT	0.0039	1.46
TREAT	0.1937	2.69**

R-SQUARED =.2482

ADJUSTED R-SQUARED =.2225

F-TEST OF OVERALL SIGNIFICANCE
WITH 11, 322 DEGREES OF FREEDOM = 9.664**

SAMPLE SIZE =334

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.4

DETERMINANTS OF KNOWLEDGE OF CONSEQUENCES OF ADOLESCENT PREGNANCY AT FOLLOW-UP IN PINELLAS COUNTY

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	1.7992	2.82**
MALE	-0.1127	-1.00
BLACK	-0.1213	-0.68
OVER14	-0.0383	-0.36
PUBASSIS	-0.0900	-0.81
FAMNUM	0.0094	0.32
FEMPRNT	-0.0747	-0.61
KNOWKID	0.4266	5.37**
STDREAD1	-0.0013	-1.58
DAYSOUT	-0.0044	-0.87
TREAT	0.1960	1.80*

R-SQUARED =0.1782

ADJUSTED R-SQUARED =0.1307

F-TEST OF OVERALL SIGNIFICANCE
WITH 10, 173 DEGREES OF FREEDOM =3.752**

SAMPLE SIZE =184

*Significant at .10 level.
**Significant at .05 level.

TABLE B.5

DETERMINANTS OF THE NUMBER OF JOBS CONSIDERED APPROPRIATE FOR WOMEN IN BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	2.6377	1.77*
MALE	-0.5562	-2.48**
BLACK	0.1477	0.52
HISPANIC	0.1198	0.35
OVER14	-0.4079	-1.82*
PUBASSIS	0.0561	0.22
FAMNUM	-0.0636	-0.89
FEMPRNT	0.0747	0.29
STDREAD1	0.0023	1.19
WOMENJOB	0.5823	13.74**
OK4WOMAN	0.4080	1.22
OK4MAN	0.3926	1.46
TREAT	0.0393	0.18

R-SQUARED =0.4500

ADJUSTED R-SQUARED =0.4316

F-TEST OF OVERALL SIGNIFICANCE
WITH 12, 360 DEGREES OF FREEDOM =24.542**

SAMPLE SIZE = 373

*Significance at the .10 level.
**Significance at the .05 level.

TABLE B.5a

DETERMINANTS OF THE NUMBER OF JOBS CONSIDERED APPROPRIATE FOR WOMAN IN BOSTON (INCLUDING SEX-TREATMENT INTERACTION)

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	2.4046	1.60
MALE	-0.3027	-0.97
BLACK	0.1689	0.59
HISPANIC	0.1620	0.47
OVER14	-0.4074	-1.82*
PUBASSIS	0.0584	0.22
FAMNUM	-0.0633	-0.89
FEMPRNT	0.0672	0.26
STDREAD1	0.0023	1.24
WOMENJOB1	0.5839	13.77**
OK4WOMAN	0.4131	1.24
OK4MAN	0.3980	1.48
TREAT	0.2837	0.92
TREAT X MALE	-0.5146	-1.16

R-SQUARE =0.4520

ADJUSTED R-SQUARE =0.4322
F-TEST OF OVERALL SIGNIFICANCE
WITH 13, 359 DEGREES OF FREEDOM = 22.779**

SAMPLE SIZE =373

*Significant at the .10 Level.

**Significant at the .05 Level.

TABLE B.6

DETERMINANTS OF THE NUMBER OF JOBS CONSIDERED APPROPRIATE FOR WOMEN IN PINELLAS COUNTY

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	-1.5817	-0.68
MALE	0.0942	0.24
BLACK	0.1008	0.16
OVER14	0.0058	0.12
PUBASSIS	-0.1814	-0.45
FAMNUM	-0.0509	-0.50
FEMPRNT	0.2557	0.59
STDREAD1	0.0062	2.12**
WOMENJOB	0.5952	8.41**
OK4WOMAN	0.8963	1.67*
OK4MAN	0.2714	0.63
TREAT	0.1468	0.37

R-SQUARED =0.3616

ADJUSTED R-SQUARED =0.3234

F-TEST OF OVERALL SIGNIFICANCE
WITH 11, 184 DEGREES OF FREEDOM =9.47**

SAMPLE SIZE = 196

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.6a

DETERMINANTS OF THE NUMBER OF JOBS CONSIDERED APPROPRIATE FOR WOMEN IN PINELLAS COUNTY (SUPPLEMENT)

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	-1.2459	-0.55
MALE	-0.9204	-1.52
BLACK	-0.0959	-0.16
OVER14	0.0079	0.02
PUBASSIS	-0.1188	-0.31
FAMNUM	-0.0190	-0.19
FEMPRNT	0.2842	0.67
STDREAD1	0.0064	2.24**
WOMENJOB	0.6079	8.81**
OK4WOMAN	0.7410	1.40
OK4MAN	0.3670	0.88
TREAT	-0.7952	-1.35
TREAT X MALE	1.6578	2.15**

R-SQUARE =0.3813
ADJUSTED R-SQUARE =0.3416

F-TEST OF OVERALL SIGNIFICANCE
WITH 12, 359 DEGRESS OF FREEDOM =9.602**

SAMPLE SIZE =200

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.7

BOSTON POST-PROGRAM MATHEMATICS REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	137.7490	2.59**
STDMATH1	0.6724	15.68**
GRADE83	12.0575	2.39**
REPEATED	14.4189	1.74*
OVER14	- 13.5492	-1.74*
MALE	- 1.2764	-0.20
FEMPRNT	0.8046	0.11
FAMNUM	0.1569	0.08
SUSPEND	- 3.8520	-0.56
MISDAYS	- 0.4662	-3.30**
PUBASSIS	- 5.8938	-0.81
BLACK	- 6.4438	-0.80
HISPANIC	- 3.8590	-0.41
TREAT	42.9014	6.83**

R-SQUARED =0.5117

ADJUSTED R-SQUARED =0.4944

F-TEST OF OVERALL SIGNIFICANCE
WITH 13, 368 DEGREES OF FREEDOM =29.660**

SAMPLE SIZE =382

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.8

PINELLAS COUNTY POST-PROGRAM MATHEMATICS REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	84.8504	1.52
STDMATH1	0.7276	13.71**
GRADE83	8.0641	1.32
REPEATED	8.5425	0.67
OVER14	2.6403	0.30
MALE	3.8657	0.52
FEMPRNT	- 1.8201	-0.22
FAMNUM	5.4991	2.84**
SUSPEND	- 16.8035	-2.24**
MISDAYS	- 0.4518	-1.33
PUBASSIS	- 4.5288	-0.60
BLACK	12.6439	-0.98
TREAT	16.2994	2.23**

R-SQUARED =0.6299

ADJUSTED R-SQUARED =0.6018

F-TEST OF OVERALL SIGNIFICANCE
WITH 12, 158 DEGREES OF FREEDOM =22.411**

SAMPLE SIZE =171

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.9

BOSTON POST-PROGRAM READING REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	283.0460	6.72**
STDREAD1	0.6125	15.25**
GRADE83	- 1.2204	-0.31
REPEATED	- 1.6834	-0.26
OVER14	4.3994	0.73
MALE	- 7.5751	-1.53
FEMPRNT	3.2093	0.58
FAMNUM	- 1.7011	-1.08
SUSPEND	- 15.0250	-2.87**
MISDAYS	0.0492	0.45
PUBASSIS	- 5.6809	-1.02
BLACK	10.9366	1.76*
HISPANIC	- 3.1121	-0.42
TREAT	30.7039	6.36**

R-SQUARED =0.4794

ADJUSTED R-SQUARED =0.4610

F-TEST OF OVERALL SIGNIFICANCE
WITH 13, 368 DEGREES OF FREEDOM =26.071**

SAMPLE SIZE =382

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.10

PINELLAS COUNTY POST-PROGRAM READING REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	180.4750	2.81**
STDREAD1	0.6503	10.045**
GRADE83	9.3492	1.37
REPEATED	-22.0524	-1.55
OVER14	- 6.8347	-0.68
MALE	- 6.4632	-0.76
FEMPRNT	3.5870	0.38
FAMNUM	0.9573	0.44
SUSPEND	3.6612	0.43
MISDAYS	0.6294	1.65
PUBASSIS	- 4.5182	-0.53
BLACK	- 2.7719	-0.19
TREAT	16.7151	2.01**

R-SQUARED =0.4821

ADJUSTED R-SQUARED =0.4428

F-TEST OF OVERALL SIGNIFICANCE
WITH 12, 158 DEGREES OF FREEDOM =12.258**

SAMPLE SIZE =171

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.11

COMBINED BOSTON AND PINELLAS COUNTY POST-PROGRAM MATHEMATICS REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	103.5360	2.58**
STDMATH1	0.6925	20.68**
GRADE83	10.7559	2.75**
REPEATED	13.0938	1.97**
OVER14	- 8.3947	-1.39
MALE	0.8536	0.17
FEMPRNT	- 0.9206	-0.17
FAMNUM	5.4220	2.30**
SUSPEND	-13.6524	1.54
MISDAYS	- 0.4627	-3.73**
PUBASSIS	- 5.4760	-1.01
BLACK	- 1.7435	-0.26
HISPANIC	0.2855	0.03
TREAT	16.2516	1.82*
BOSTON	25.7962	1.41
BOSTON x FAMNUM	- 5.4795	-1.83*
BOSTON x SUSPEND	9.4789	0.89
BOSTON x TREAT	26.7391	2.52**

R-SQUARED =0.5405

*Significant at the .10 level.
**Significant at the .05 level.

ADJUSTED R-SQUARED =0.5259

F-TEST OF OVERALL SIGNIFICANCE
WITH 17, 535 DEGREES OF FREEDOM =37.017**

SAMPLE SIZE =553

TABLE B.12

COMBINED BOSTON AND PINELLAS COUNTY POST-PROGRAM READING REGRESSION

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	236.0080	6.77**
STDREAD1	0.6314	18.73**
GRADE83	1.0653	0.31
REPEATED	- 4.2207	-0.74
OVER14	1.6189	0.13
MALE	- 7.8023	-1.83*
FEMPRNT	2.4323	0.52
FAMNUM	0.8326	0.41
SUSPEND	0.0268	0.00
MISDAYS	0.1306	1.23
PUBASSIS	- 4.8241	-1.04
BLACK	6.5068	1.14
HISPANIC	- 5.8313	-0.81
TREAT	16.4737	2.15**
BOSTON	18.2945	1.16
BOSTON X FAMNUM	- 2.5070	-0.98
BOSTON X SUSPEND	-15.0630	-1.65*
BOSTON X TREAT	14.3613	1.58

R-SQUARED =0.4968

*Significant at the .10 level.
**Significant at the .05 level.

ADJUSTED R-SQUARED =0.4808

F-TEST OF OVERALL SIGNIFICANCE
WITH 17, 535 DEGREES OF FREEDOM =31.068**

SAMPLE SIZE =553

TABLE B.13

ANALYSIS OF MATH SCORES INCLUDING DIFFERENTIAL AGE, RACE AND SEX TREATMENT EFFECTS

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	111.3090	2.75**
STDMATH1	0.6864	20.52**
GRADE83	10.8740	2.79**
REPEATED	14.2689	2.15**
OVER14	-3.5405	-0.45
MALE	-13.6005	-1.92*
FEMPRNT	-0.5423	-0.10
FAMNUM	5.8739	2.49**
SUSPEND	-15.0286	-1.70*
MISDAYS	-0.4760	-3.84**
PUBASSIS	-5.5925	-1.03
BLACK	-2.0003	-0.21
HISPANIC	-1.9324	-0.17
TREAT	7.4787	0.45
BOSTON	25.5834	1.39
BOSTON X SUSPEND	11.0961	1.04
BOSTON X FAMNUM	-5.8235	-1.95*
BOSTON X TREAT	29.4259	2.58**
TREAT X OVER14	-9.5218	-0.98
TREAT X MALE	27.6838	2.85**
TREAT X BLACK	-3.8156	-0.29
TREAT X HISPANIC	-0.1227	-0.99

TABLE B.13 (cont'd.)

R-SQUARE =0.5484

ADJUSTED R-SQUARE =0.5305

F-TEST OF OVERALL SIGINFICANCE
WITH 21, 531 DEGREES OF FREEDOM =30.700**

SAMPLE SIZE =553

*Significant at .10 Level

**Significant at .05 Level

TABLE B.14

ANALYSIS OF READING SCORES INCLUDING DIFFERENTIAL AGE, RACE AND SEX TREATMENT EFFECTS

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	237.788	6.78**
STDREAD1	0.6275	18.68**
GRADE83	0.7997	0.24
REPEATED	-4.4390	-0.78
OVER14	-2.8865	-0.43
MALE	-15.6011	-2.57**
FEMPRNT	1.4736	0.31
FAMNUM	1.0004	0.50
SUSPEND	-1.0232	-0.14
MISDAYS	0.1123	1.06
PUBASSIS	-3.9526	-0.85
BLACK	17.5535	2.19**
HISPANIC	3.4258	0.36
TREAT	24.7787	1.75*
BOSTON	21.3375	1.35
BOSTON X SUSPEND	-13.2973	-1.46
BOSTON X FAMNUM	-2.9846	-1.17
BOSTON X TREAT	-12.2862	-1.26
TREAT X OVR14	7.6250	0.92
TREAT X MALE	15.9599	1.92*
TREAT X BLACK	-23.1238	-2.03**
TREAT X HISPANIC	-21.9251	-1.55

TABLE B.14 (cont'd.)

R-SQUARE =0.5054

ADJUSTER R-SQUARE =0.4858

F-TEST OF OVERALL SIGINIFCANCE
WITH 21, 531 DEGREES OF FREEDOM =25.837**

SAMPLE SIZE =553

*Significant at .10 Level

**Significant at .05 Level

TABLE B.15

NUMBER OF HOURS IN PROGRAM REGRESSION FOR BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	198.5670	5.19**
STDMATH1	0.0441	1.15
STDREAD1	- 0.0698	-1.49
GRADE83	1.1385	0.37
REPEATED	6.2596	1.05
OVER14	- 1.3420	-0.29
MALE	- 6.9006	-1.83*
FEMPRNT	1.8122	0.42
FAMNUM	0.5865	0.48
SUSPEND	- 0.8127	-0.20
MISDAYS	- 0.3140	-2.88**
PUBASSIS	4.0328	0.94
BLACK	- 0.2602	-0.06
HISPANIC	- 3.0405	-0.54
TREAT	-108.4780	-2.27**
TREAT X REPEATED	- 12.2889	-1.59
TREAT X MISDAYS	0.0684	0.43
TREAT X STDMATH1	0.0133	0.21
TREAT X STDREAD1	0.1286	1.74*

R-SQUARE =0.1037

ADJUSTED R-SQUARE =0.0558

F-TEST OF OVERALL SIGNIFICANCE
WITH 18, 337 DEGREES OF FREEDOM =2.165**

SAMPLE SIZE =356

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.16

NUMBER OF HOURS IN PROGRAM REGRESSION FOR PINELLAS COUNTY

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	43.7248	0.40
STDMATH1	0.4079	2.17**
STDREAD1	-0.1833	-0.84
GRADE83	-11.3380	-1.15
REPEATED	51.0146	1.96*
OVER14	35.5358	2.39**
MALE	- 2.4947	-0.21
FEMPRNT	3.1025	0.24
FAMNUM	1.5048	0.43
SUSPEND	-13.4382	-1.03
MISDAYS	1.2594	1.51
PUBASSIS	2.1821	0.18
BLACK	6.7603	0.34
TREAT	203.0490	1.45
TREAT X REPEATED	-55.7193	-1.60
TREAT X MISDAYS	- 0.4845	-0.30
TREAT X STDMATH1	- 0.4426	-1.96*
TREAT X STDREAD1	0.2507	0.93

R-SQUARED =0.1642

ADJUSTED R-SQUARED =0.0063

F-TEST OF OVERALL SIGNIFICANCE
WITH 17, 90 DEGREES OF FREEDOM = 1.040

SAMPLE SIZE =108

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.17

NUMBER OF HOURS IN PROGRAM REGRESSION COMBINED BOSTON AND PINELLAS COUNTY SAMPLES

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
CONSTANT	30.4633	0.45
STDMATH1	0.2999	2.36**
STDREAD1	-0.1107	-0.76
GRADE83	-1.3108	-0.42
REPEATED	36.1044	2.79**
OVER14	5.6602	1.19
MALE	-5.3947	-1.40
FEMPRNT	2.2673	0.53
FAMNUM	0.7456	0.61
SUSPEND	-2.7525	-0.67
MISDAYS	0.7097	1.43
PUBASSIS	3.2351	0.76
BLACK	2.5323	0.50
HISPANIC	0.2856	0.05
TREAT	102.2380	1.21
TREAT X REPEATED	-16.1966	-1.94*
TREAT X MISDAYS	0.0605	0.33
TREAT X STDMATH1	-0.2995	-1.98*
TREAT X STDREAD1	0.1907	1.01

TABLE B.17 (cont'd.)

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	T-RATIO
BOSTON	171.2720	2.30**
BOSTON X STDMATH1	- 0.2549	-1.90*
BOSTON X STDREAD1	0.0540	0.35
BOSTON X REPEATED	-30.8743	-2.32**
BOSTON X MISDAYS	- 1.0048	-2.00**
BOSTON X TREAT	-204.1970	-2.04**
BOSTON X TREAT X STDMATH1	0.3081	1.84*
BOSTON X TREAT X STDREAD1	- 0.0628	-0.32

R-SQUARED =0.1513

ADJUSTED R-SQUARED =0.1009

F-TEST OF OVERALL SIGNIFICANCE
WITH 26, 437 DEGREES OF FREEDOM =2.997**

SAMPLE SIZE =464

*Significant at the .10 level.
**Significant at the .05 level.

TABLE B.18

COMPLETION LOGIT ANALYSIS FOR BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	WALD TEST	DERIVATIVE WITH RESPECT TO EXPLANATORY VARIABLE EVALUATED AT MEAN
CONSTANT	-0.0364	0.00	
STDMATH1	0.0051	2.09	0.0005
STDREAD1	-0.0050	1.33	0.0005
GRADE83	0.2426	0.86	0.2192
REPEATED	0.8818	2.67	0.0797
OVER14	-0.1234	0.09	-0.1112
MALE	-0.7511	4.59**	-0.0679
FEMPRNT	-0.0313	0.01	-0.0028
FAMNUM	0.1253	1.27	0.0113
SUSPEND	0.1107	0.09	0.0100
MISDAYS	-0.0163	3.74*	-0.0015
PUBASSIS	0.1869	0.24	0.0169
BLACK	-0.1353	0.10	-0.0122
HISPANIC	-0.2395	0.22	-0.2164
TREAT	-6.7170	2.52	-0.6069
TREAT X MSDA	-0.0003	0.00	-0.0000
TREAT X REPET	-1.1186	2.40	-0.1011
TREAT X STDM1	-0.0038	0.46	-0.0003
TREAT X STDR1	0.0139	4.82**	0.0013

TABLE B.18 (cont'd.)

ESTIMATED PROBABILITY AT MEAN =.8896

LOG LIKELIHOOD =-130.04

LOG LIKELIHOOD FOR INTERCEPT =-144.41

LIKELIHOOD RATIO TEST APPROIMATE CHI-SQUARE =28.74*
WITH 18 DEGREES OF FREEDOM

*Significant at the .10 level
**Significant at the .05 level

TABLE B.19

COMPLETION LOGIT FOR PINELLAS

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	ASYMPTOTIC T-RATIO	DERIVATIVE WITH RESPECT TO VARIABLE EVALUATED AT MEAN
CONSTANT	-1.1954	-0.32	-0.0012
STDMATH1	0.0069	1.14	-0.0002
STDREAD1	-0.0011	-0.19	-0.0861
GRADE83	-0.5026	-1.49	-0.0861
REPEATED	1.5160	1.67*	0.2598
OVER14	1.0959	2.16*	0.1878
MALE	0.0657	0.17	0.0113
FEMPRNT	-0.2945	-0.67	-0.0505
FAMNUM	-0.0236	-0.24	-0.0040
SUSPEND	-0.4884	-1.20	-0.0837
MISDAYS	0.0457	1.36	0.0078
PUBASSIS	-0.5627	-1.36	-0.0964
BLACK	-0.2828	-0.40	-0.0485
TREAT	12.4185	0.25	2.1283
TREAT X MISDAYS	-0.0628	-1.59	-0.0108
TREAT X REPEATED	-10.6322	-0.21	-1.8222
TREAT X STDMATH1	-0.0051	-0.68	-0.0009
TREAT X STDREAD1	0.0046	0.59	0.0008

TABLE B.19 (cont'd.)

ESTIMATED PROBABILITY EVALUATED AT MEAN =.7804

LOG LIKELIHOOD =-93.967

LOG LIKELIHOOD FOR INTERCEPT =-108.14

LIKELIHOOD RATIO TEST APPROXIMATE
CHI-SQUARE =28.34* WITH 17 DEGRESS OF FREEDOM.

*Significant at the .10 level
**Significant at the .05 level

TABLE B.20

DETERMINANTS OF COMPLETION LOGIT FOR BOSTON AND PINELLAS COUNTIES COMBINED

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	WALD TEST	DERIVATIVE WITH RESPECT TO VARIABLE EVALUATED AT MEAN
CONSTANT	-1.2196	0.15	
STDMATH1	0.0035	0.39	0.0004
STDREAD1	-0.0017	0.10	-0.0002
GRADE83	-0.0236	0.01	-0.0030
REPEATED	0.7207	1.15	0.0911
OVER14	0.2888	0.91	0.0365
MALE	-0.3329	1.76	-0.0421
FEMPRNT	-0.2401	0.72	-0.0304
FAMNUM	-0.0329	0.22	0.0042
SUSPEND	-0.1254	0.24	-0.0159
MISDAYS	0.0011	0.00	0.0001
PUBASSIS	-0.1255	0.21	-0.0159
BLACK	0.0106	0.00	0.0013
HISPANIC	-0.0509	0.01	-0.0064
TREAT	-1.0461	0.07	-0.1323
TREAT X MISDAYS	-0.0034	0.09	-0.0004
TREAT X REPEATED	-1.3687	4.61**	-0.1731
TREAT X STDMATH1	-0.0011	0.03	-0.0001
TREAT X STDREAD1	0.0058	0.66	0.0007
BOSTON	2.9922	0.54	0.3784
BOSTON X STDMATH1	0.0015	0.05	0.0002

TABLE B.20 (cont'd)

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	WALD TEST	DERIVATIVE WITH RESPECT TO VARIABLE EVALUATED AT MEAN
BOSTON X STDREAD1	-0.0022	0.10	-0.0003
BOSTON X REPEATED	-0.0596	0.01	-0.0075
BOSTON X MISDAYS	-0.0144	0.72	-0.0018
BOSTON X TREAT	-4.5445	0.62	-0.5747
BOSTON X TREAT X STDMATH1	0.0036	0.17	0.0005
BOSTON X TREAT X STDREAD1	0.0079	0.68	0.0010

ESTIMATED PROBABILITY EVALUATED AT MEAN =0.8515

LOG LIKELIHOOD =-232.33

LOG LIKELIHOOD FOR INTERCEPT =-267.32

LIKELIHOOD RATIO TEST APPROXIMATE
CHI-SQUARE =69.98** WITH 26 DEGREES OF FREEDOM

*Significant at the .10 level
**Significant at the .05 level

TABLE B.21

LOGIT ANALYSIS ON EQUAL EARNINGS FOR BOSTON

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	WALD TEST	DERIVATIVE WITH RESPECT TO EXPLANATORY VARIABLE EVALUATED AT MEAN
CONSTANT	-1.3562	0.57	_____
TREAT	-0.4433	2.77*	-0.0863
MALE	0.6208	5.21**	0.1208
BLACK	-0.3453	0.93	-0.0672
HISPANIC	-0.2723	0.42	-0.0530
OVER14	0.3889	2.10	0.0757
PUBASSIS	0.0113	0.00	0.0022
FAMNUM	-0.0171	0.04	-0.0033
FEMPRNT	-0.3377	1.19	-0.0657
STDREAD1	0.0002	0.01	0.0003
EQEARNS	1.9680	48.71**	0.3830
WOMENJOB	0.0295	0.32	0.0057
OK4WOMAN	0.4724	1.55	0.0919
OK4MAN	0.6468	4.34**	0.1259

ESTIMATED PROBABILITY EVALUATED AT MEAN = .7354
LOG LIKELIHOOD = -226.86
LOG LIKELIHOOD FOR INTERCEPT =-181.96
LIKELIHOOD RATIO TEST APPROXIMATE CHI-SQUARE = 89.81**
WITH 13 DEGREES OF FREEDOM

**Significant at the .05 level.
*Significant at the .10 level.

TABLE B.22

LOGIT ANALYSIS ON EQUAL EARNINGS FOR PINELLAS

EXPLANATORY VARIABLE	ESTIMATED COEFFICIENT	WALD TEST	DERIVATIVE WITH RESPECT TO EXPLANATORY VARIABLE EVALUATED AT MEAN
CONSTANT	-1.6705	0.54	-0.3138
TREAT	-0.7938	3.97**	-0.1491
MALE	0.7608	3.81*	0.1429
BLACK	-0.2895	0.20	-0.0544
OVER14	0.1077	0.09	0.0202
PUBASSIS	0.0223	0.00	0.0042
FAMNUM	-0.0851	0.78	0.0160
FEMPRNT	-0.0342	0.01	-0.0064
STDREAD1	0.0021	0.53	0.0004
EQEARNS	2.1536	29.83**	0.4046
WOMENJOB	0.0245	0.12	0.0046
OK4WOMEN	0.3653	0.52	0.0686
OK4MAN	-0.0415	0.01	-0.0078

ESTIMATED PROBABILITY EVALUATED AT MEAN = .7493

LOG LIKELIHOOD = -96.55

LOG LIKELIHOOD FOR INTERCEPT = -118.51

LIKELIHOOD RATIO TEST APPROXIMATE CHI-SQUARE = 43.91**
WITH 12 DEGREES OF FREEDOM

TABLE B.23

BOSTON SYSTEM NONLINEAR TWO-STAGE LEAST SQUARE ANALYLSIS

EXPLANATORY VARIABLE	HOURS	MATH	READING
CONSTANT	198.5670 (5.19)**	200.6722 (1.23)	171.3040 (-0.72)
STDMATH1	0.0441 (1.15)	0.6052 (11.73)**	NA
STDREAD1	-0.0697 (-1.49)	NA	0.6596 (7.83)**
GRADE83	1.1385 (0.37)	9.4337 (1.72)*	-5.3626 (-0.69)
REPEATED	6.2596 (1.05)	16.6580 (1.78)*	-11.3227 (-0.86)
OVER14	-1.3420 (-0.29)	-7.8496 (-0.93)	7.3856 (0.63)
MALE	-6.9006 (-1.83)*	4.1739 (0.52)	2.2538 (0.21)
FEMPRNT	1.8122 (0.42)	4.9877 (0.64)	0.5414 (0.05)
FAMNUM	0.5865 (0.48)	0.8661 (0.37)	-4.7145 (-1.46)
SUSPEND	-0.8127 (-0.20)	-2.9998 -(0.41)	-12.3452 (-1.23)
MISDAYS	-0.3140 (-2.88)**	-0.3377 (-1.34)	0.5589 (-1.67)*
PUBASSIS	4.0328 (0.94)	-3.2599 (-0.38)	-13.9352 (-1.19)
BLACK	-0.2602 (-0.05)	-7.6632 (-0.89)	16.9519 (1.41)
HISPANIC	-3.0405 (-0.54)	2.8162 (0.27)	1.8448 (0.13)

TABLE B.23 (cont'd.)

EXPLANATORY VARIABLE	HOURS	MATH	READING
TREAT	-108.4780 (-2.26)**	-200.5400 (-1.32)	346.4448 (1.56)
HOURS	NA	-0.0761 (-0.08)	2.4696 (2.05)**
HOURS x TREAT	NA	1.3631 (1.64)	-1.6808 (-1.38)
TREAT x REPEATED	-12.2889 (-1.59)	NA	NA
TREAT x MISDAYS	0.0684 (0.42)	NA	NA
TREAT x STDMATH1	0.0133 (0.21)	NA	NA
TREAT x STDREAD1	0.1286 (1.74)*	NA	NA

SUM OF SQUARED ERRORS =10.75

SAMPLE SIZE =356

T-RATIOS ARE IN PARENTHESES

*SIGNIFICANT AT .10 LEVEL

**SIGNIFICANT AT .05 LEVEL

TABLE B.24

PINELLAS SYSTEM NONLINEAR TWO-STAGE LEAST SQUARE ANALYSIS

EXPLANATORY VARIABLE	HOURS	MATH	READING
CONSTANT	43.7248 (0.40)	13.9480 (0.16)	95.2250 (0.75)
STDMATH1	0.4079 (2.17)**	0.7799 (6.32)**	NA
STDREAD1	-0.1883 (-0.84	NA	0.5172 (2.90)**
GRADE83	-11.3380 (-1.15	13.3046 (0.78)	29.3434 (1.29)
REPEATED	51.0146 (1.96)*	23.2026 (0.91)	-43.8197 (-1.32)
OVER14	35.5358 (2.39)**	-7.1263 (-0.27)	-36.6945 (-1.04)
MALE	-2.4947 (-0.21)	8.1342 (0.57)	10.3483 (0.51)
FEMPRNT	3.1025 (0.24)	4.0046 (0.28)	1.6660 (0.09)
FAMNUM	1.5048 (0.43)	4.5453 (1.07)	1.3015 (-0.22)
SUSPEND	-13.4382 (-1.03)	-18.8927 (-0.62)	36.3242 (0.86)
MISDAYS	1.2594 (1.51)	-0.1588 (-0.12)	0.4072 (0.23)
PUBASSIS	2.1821 (0.18)	-0.2672 (-0.02)	4.1126 (0.18)
BLACK	6.7603 (0.34)	20.3268 (1.27)	-6.2106 -0.26)
TREAT	203.0488 (1.45)	-74.7939 (-0.17)	440.7760 (-0.69)

TABLE B.24 (continued)

EXPLANATORY VARIABLE	HOURS	MATH	READING
HOURS	NA	-0.1124 (-0.30)	0.2754 (0.56)
TREAT X HOURS	NA	0.4867 (0.24)	2.1171 (0.71)
TREAT X REPEATED	55.7193 (-1.60)	NA	NA
TREAT X MISDAYS	-0.4845 (-0.30)	NA	NA
TREAT X STDMATH1	-0.4426 (-1.96)*	NA	NA
TREAT X STDREAD1	0.2507 (0.93)	NA	NA

SUM OF SQUARED ERRORS = 16.774

SAMPLE SIZE = 108

T- RATIO ARE IN PARENTHESIS

*Significant at the .010 Level

**Significant at the .05 Level

TABLE B.25

BOSTON SYSTEM ITERATED THREE-STAGE LEAST SQUARES ANAYLSIS

EXPLANATORY VARIABLE	HOURS	MATH	READING
CONSTANT	170.6920	196.7690	-151.5650
	(4.85)**	(1.20)	(-0.64)
STDMATH1	0.0885	0.5958	na
	(3.01)**	(11.59)**	
STDREAD1	-0.0772	na	0.6401
	(-1.76)*		(7.73)**
GRADE83	1.1108	9.4739	-4.9487
	(0.36)	(1.72)*	-0.64
REPEATED	6.5594	16.6527	-10.6671
	(1.18)	(1.78)*	(-0.82)
OVER14	-1.0866	-7.9313	6.8946
	(-0.23)	(-0.94)	(0.59)
MALE	-6.7441	4.5277	2.1841
	(-1.79)*	(0.56)	(0.21)
FEMPRNT	2.0542	4.8890	0.8171
	(0.48)	(0.62)	(0.08)
FAMNUM	0.7838	0.8235	-4.6658
	(0.64)	(0.35)	(-1.46)
SUSPEND	-.5474	-3.0794	-12.2849
	(-0.14)	(-0.42)	(-1.24)
MISDAYS	-0.2722	-0.3239	0.5497
	(-2.56)**	(-1.28)	(1.66)*
PUBASSIS	4.0065	-3.5445	-13.8690
	(0.93)	(-0.41)	(-1.20)
BLACK	-0.4974	-7.7435	16.5255
	(-0.10)	(-0.90)	(1.40)
HISPANIC	-3.0546	2.7943	1.5050
	(-0.54)	(0.27)	(0.10)

Table B.25 (Cont'd)

EXPLANATORY VARIABLE	HOURS	MATH	READING
HOURS	na	-0.0203 (-0.02)	2.4213 (2.03)**
TREAT	-64.7392 (-1.67)*	-199.8310 (-1.31)	329.9315 (1.51)
TREAT x HOURS	na	1.3622 (1.63)	-1.5892 (-1.33)
TREAT x REPEATED	-11.9846 (-2.10)**	na	na
TREAT x MISDAYS	-0.0255 (-0.17)	na	na
TREAT x STDMATH1	-0.0213 (-0.51)	na	na
TREAT x STDREAD1	0.1051 (1.86)*	na	na

Sum of Squared Errors = 11.095

Sample Size = 356

T-Ratio are in Parenthesis

*Significant at .10 Level
**Significant at .05 Level

TABLE B.26

PINELLAS SYSTEM ITERATED THREE-STAGE LEAST SQUARES ANALYSIS

EXPLANATORY VARIABLE	HOURS	MATH	READING
CONSTANT	32.0608 (0.31)	3.5665 (0.04)	92.8269 (0.24)
STDMATH1	0.3656 (1.95)*	0.7276 (6.23)**	NA
STDREAD1	-0.1152 (-0.55)	NA	-0.1013 (-0.21)
GRADE83	-12.3933 (-1.26)	19.1750 (1.13)	87.8133 (1.32)
REPEATED	54.1835 (2.13)**	15.0738 (0.59)	-118.2790 (-1.20)
OVER14	35.7846 (2.40)**	-15.8653 (-0.60)	-121.3230 (-1.16)
MALE	-3.2205 (-0.27)	11.5858 (0.79)	45.0601 (0.73)
FEMPRNT	3.3093 (0.26)	0.2745 (0.02)	-25.5184 (-0.44)
FAMNUM	1.5254 (0.44)	3.4048 (0.78)	-12.0868 (-0.68)
SUSPEND	-13.8517 (-1.08)	-9.2141 (-0.30)	138.7960 (1.12)
MISDAYS	1.4028 (1.74)*	-0.5809 (-0.45)	-3.8084 (-0.74)
PUBASSIS	2.0972 (0.17)	4.4596 (0.26)	51.8075 (0.74)
BLACK	3.6098 (0.18)	20.7621 (1.21)	5.8901 (0.08)
TREAT	212.0511 (1.62)	-218.8380 (-0.50)	-2102.0400 (-1.13)

TABLE B.26 (Cont'd)

EXPLANATORY VARIABLE	HOURS	MATH	READING
HOURS	NA	-0.0241 (-0.06)	0.8704 (0.57)
HOURS X TREAT	NA	1.1559 (0.56)	9.8318 (1.13)
TREAT. X REPEATED	-58.8562 (-1.79)*	NA	NA
TREAT. X MISDAYS	0.9274 (-0.67)	NA	NA
TREAT. X STDMATH1	-0.3581 (-1.68)*	NA	NA
TREAT. X STDREAD1	0.1632 (0.67)	NA	NA

Sum of Squared Errors = 8.514

Sample Size = 108

T-Ratio are in Parenthesis

*Significant at .10 Level

**Significant at .05 Level